

# **The Final Theory**

**Rethinking Our Scientific Legacy**

**Mark McCutcheon**

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*The Final Theory: Rethinking Our Scientific Legacy*

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*To my parents for their support, my father for his considered feedback throughout and many long hours of editing, and friends who offered their time and comments along the way*



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## *Introduction*

We are all born into this universe and live out our lives within its laws and principles. From the inescapable law of gravity extending across the universe to the fundamental principles behind the tiniest atoms, our lives are immersed in the laws of nature. As intelligent beings it is only natural for us to wonder about the world around us, and as children of this universe it seems reasonable that we should be able to arrive at an understanding of it all – that this understanding is very much our birthright. In fact, to many it may seem as if we have already arrived at this understanding, with only a few loose ends remaining. Isaac Newton gave us an understanding of gravity as an attracting force in nature, and from there many others have contributed to our understanding of light, electricity, magnetism, atomic structure, etc. This process has finally brought us to a point where science today contains theories that cover every known observation, collectively known as *Standard Theory*. This age of understanding has made it possible to invent radio, television, and computers, even allowing us to build spacecraft that have visited distant planets. Although scientists continue to pursue deeper questions, it may seem that Standard Theory provides us with a fairly comprehensive scientific understanding of our universe. But is this really the case?

How much do we *truly* understand about gravity, for example? Do we know the physical reasons why gravity attracts objects together instead of repelling them away from one another? Newton gave us a compelling *description* of this observation as an apparent attracting force, but provided no *explanation* for the existence and nature of this force itself. Does it really make sense that a force holds objects to the surface of planets, and moons in orbit, all with no known power source? Do we know if it is possible to create some type of anti-gravity device, what principles might underlie such a device, or for that matter, even what principles underlie gravity itself? And despite Newton's concept of gravity, Albert Einstein found it necessary to continue searching for answers, arriving at a very different description of gravity, while scientists continue to search for still other explanations. Why is it that we have two explanations for the same effect in our science today, and

continue to search for still others – and do any of them truly answer our most basic questions about gravity?

Do we *truly* understand light? For centuries a debate raged back and forth as to whether light was composed of waves or particles. Today we have settled on a belief that somehow light is *both* a wave *and* a particle (the photon) – sometimes behaving as one and sometimes as the other, depending on the situation or experiment. Even today this remains a very mysterious and poorly understood characteristic of light as part of a theory known as *Quantum Mechanics* – a theory whose very creators and practitioners readily describe as bizarre and mysterious.

Do we *truly* understand magnetism? We know that two magnets will repel each other if both of their north poles or south poles face each other, but can we truly explain this? If we try to hold these two magnets together against this repelling force our muscles will tire as we continuously expend energy, but the repelling force from within the magnet does not. Is it reasonable that an apparently *endless* force from within magnets will continuously battle any external power source in this manner, eventually exhausting all external power sources without an equivalent weakening itself? In fact, there is *no identifiable power source at all* within these magnets to support this endless force from within. Do we even know what magnetic fields are, or have we simply discovered how to create them and learned to model their behavior with equations? That is, are we confusing practical know-how and abstract models with true knowledge and understanding?

A closer look shows that solid answers to these and many other questions about everyday occurrences are not to be found in today's Standard Theory. Science has managed to *model* our observations rather well, but many of these models lack a clear physical explanation. Newton worked out a *model* of gravity as an attracting force but couldn't tell us *why* it should attract and *how* matter does this endlessly simply by existing; in fact, we still lack these answers three hundred years later. We have equations that *model* magnetic fields, and theories that describe their obvious observed behaviors, but we have little clear physical explanation for *why* they behave as they do, leaving mysteries such as the apparently endless energy emanating from within a simple permanent magnet. In fact, many scientists recognize that we still lack a deep

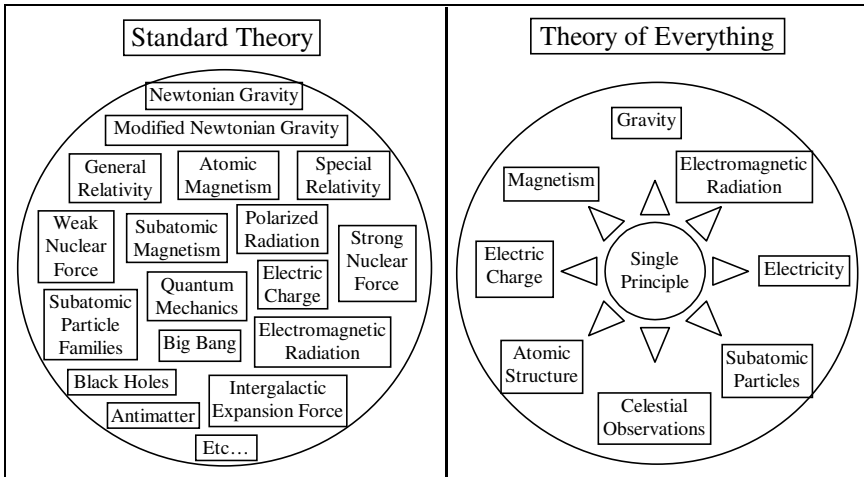
understanding of our universe, which is why there are ongoing efforts to further our knowledge using high-energy particle accelerators and powerful space telescopes. The hope is that these investigations will lead to a key breakthrough in understanding – perhaps through the discovery of a currently unknown fundamental subatomic particle or principle, or possibly via some new type of energy or cosmological phenomenon detected in the heavens. It is expected that if such a key fundamental discovery is made, it will have a ripple effect that runs through the patchwork of often poorly understood theories in our Standard Theory today, ideally transforming them into a single clear theory that simplifies and truly explains everything. This much-hoped-for theory is known by physicists as the Theory of Everything – and is considered the ultimate goal of much fundamental research in physics today.

A key expectation of the Theory of Everything is not only that it will finally explain all of physics – gravity, light, magnetism, etc. – with a clarity and simplicity that is unknown today, but that it will do so via *one single unifying principle* in nature that has so far eluded us. Once found, this theory is expected to provide a clarity and understanding akin to turning on a light to see the contents of a room at a glance, where current theory is like a flashlight in the dark, giving only disconnected glimpses here and there. A less comprehensive form of this theory, known as the Unified Field Theory, would explain and unify everything *except* gravity, since it is thought that gravity may have a very different nature than the other fields and forces once we come to truly understand them all. Both theories are sought after by physicists around the world today, with the ultimate goal being the arrival at an understanding that explains all the forces of nature *including* gravity – i.e. the all-encompassing Theory of Everything.

Although this fairly formal definition of the Theory of Everything has only taken shape within the last century, it has actually been the ultimate goal of science ever since the earliest times; even medieval alchemists were, in their own way, searching for this ultimate understanding of the physical world. Some of Newton's many contributions to science were his descriptions of gravity, light, and the mechanics of moving objects, while Einstein provided quite different descriptions of these phenomena, with additional ideas about energy,

mass, space and time. Both of these scientists were essentially in pursuit of the Theory of Everything, whether or not their efforts were formally presented as such, as are many scientists who pursue basic research in an attempt to discover fundamental truths about our universe.

So far, our efforts have not yielded the Theory of Everything, but rather a “theory of everything” known as Standard Theory. Although it isn’t typically represented this way, Standard Theory is indeed a “theory of everything” since it attempts to explain every known observation and phenomenon. It has evolved from many hypotheses presented over the centuries, with the most successful ones incorporated as sub-theories *within* Standard Theory. Even such radical and mysterious theories as *Quantum Mechanics* and *Special Relativity* are not considered part of some other “theory of everything” but part of Standard Theory today. Therefore, Standard Theory is not only a “theory of everything,” but it is also the *only* one so far. In order for a new theory to truly form the basis of another “theory of everything” it would have to be based on a principle that lies entirely outside of known physics – *and* provide a sweeping rewrite of everything in Standard Theory based entirely on this new principle. Figure 1-1 shows the patchwork of theories within Standard Theory today that have resulted from our “flashlight-in-the-dark” approach to science over the past few centuries, as well as the single illuminating perspective of the Theory of Everything that is expected once the correct underlying principle is discovered.



**Fig. 1-1** Patchwork of Theories Today vs. Theory of Everything

The chapters to follow present just such a new principle in physics, showing that all matter may well possess this important new property that has so far been overlooked or misunderstood, and developing this principle into a second “theory of everything” for us to consider. This new theory begins with a clear physical explanation for gravity that resolves the many questions and mysteries surrounding it today, such as why it behaves as an attracting force and how it functions without a power source. Planetary orbits, ocean tides, and all other known gravitational observations are entirely explained by this new theory without relying on our current theories of gravity. New insights and possibilities are also suggested by this new theory that are unknown today and would not be predicted by our current gravitational theories.

This same new principle further explains the structure of the atom, as well as the nature of the individual electrons, protons, and neutrons composing atoms, with a physical simplicity and clarity that is unknown today. This new perspective on atomic structure shows how the gravity of objects can be directly related to the electricity and magnetism produced by the flow of electrons in wires, since this new principle underlies both atoms and electrons. The apparently endless energy within magnets mentioned earlier is also explained by this new principle, and a clear physical reason is given for why electricity and

magnetism are so closely related. This principle also suggests an explanation of electron orbits within atoms that resolves this still mysterious aspect of atomic theory in our science today.

This same new principle is further shown to explain the nature of light, suggesting a resolution to the age-old question of whether light is a particle or a wave ... or indeed something else entirely. Since the mysterious wave-particle beliefs about light in Standard Theory support a sizable portion of the theory of *Quantum Mechanics*, resolving this issue has serious implications for *Quantum Theory*. In fact, our current quantum mechanical descriptions of atomic structure, light, and energy are shown to be unnecessary once the new unifying principle is considered. This should be expected of any alternate “theory of everything” since, by definition, it would have to be entirely separate and self-sustaining without relying on any of the patchwork of theories that compose Standard Theory today – of which *Quantum Mechanics* is one. As might be further expected then, Einstein’s *Special Relativity Theory* is also shown to have serious problems, and is also replaced by this new principle. This means we can now replace the complexities and mysteries of *Quantum Mechanics* and *Special Relativity* with one simple principle that runs throughout our science, dispelling some long-standing mysterious beliefs such as the speed-of-light limit that we accept as true today. All of the well-known thought experiments and real-world experiments that are used to support these mysterious theories and beliefs are re-examined and shown to have serious flaws, misunderstandings, or even clear errors upon closer examination.

Finally, the same simple principle is shown to explain the many mysterious phenomena and particles that have emerged from high-energy particle accelerator experiments in recent decades, such as *virtual particles* and *antimatter*, removing the mystique that surrounds them today. This new explanation of subatomic particle experiments also suggests a new interpretation for the increasing number of new particle types that are being discovered in ever more powerful particle accelerators. It also provides a new perspective on Einstein’s idea that matter and energy can be converted back and forth (according to his famous equation,  $E=mc^2$ ). Rather than this mysterious conversion of matter into energy in the explosion of an atomic bomb, or energy into

matter when subatomic particles apparently materialize out of pure energy in particle accelerators, this new unifying principle provides a clear, demystifying explanation for both effects. This principle also speaks to many of our celestial observations, suggesting simple alternate explanations for observations leading to today's more mysterious theories about Black Holes, the "Big Bang" creation event, and the apparently accelerating expansion of our universe.

The alternate explanations presented throughout this book do not constitute a string of proposed new theories *within* Standard Theory, but belong to a new and *entirely alternate theory* – an alternate "theory of everything." This parallel explanation of our universe provides answers to the many questions and mysteries in our science today with a clarity that allows even non-scientists to truly comprehend our universe – and does so via one simple unifying principle that is consistent with all known experiments and observations. It is worth noting that this last point is a claim that cannot be made even of Standard Theory today. That is, as shown in each of the following chapters, within many of our everyday experiences lie unanswered questions, unexplained mysteries, and even clear violations of our most elementary laws of physics when explained with Standard Theory. Therefore, as it stands today, our current body of scientific knowledge is not merely lacking some answers, but is actually a *fatally flawed* "theory of everything." While it is possible that our ongoing search for answers will be able to resolve these flaws and turn Standard Theory into the much-sought-after Theory of Everything, it is equally possible that the answers can only be found in an entirely new "theory of everything." It is suggested that the new theory presented in the following chapters does not merely provide an entirely alternate way of viewing our universe, but that it is the only one to meet the criteria of the Theory of Everything for which science has been searching for centuries. However, this will be up to the scientific community, as well as each individual reader, to decide for themselves. We now begin the journey toward discovery and understanding of this new principle with an exploration of *gravity*.

## First ... A Note on Format

Although this book is intended for both scientists and non-scientists alike, it does represent a sweeping re-think of our complete body of scientific knowledge today. Therefore, in order to help organize the discussions, as well as to quickly identify key points and their significance, summary boxes or icons will accompany key sections or phrases as follows:

**NOTE**


Highlights a key point in a discussion.

**WATCH FOR...**


- Lists key points in the discussion to follow.
- 

**NEW IDEA**


Introduces a new idea for consideration.

**LAW**


Reminder of a current law of physics in Standard Theory.

**VIOLATION**


Indicates a physical law violation in a current scientific belief.

**MYSTERY**


Indicates an unexplained mystery in a current scientific belief.

**ERROR**


Indicates a logic or math error in a current scientific belief.

**EXPERIMENT**

Presents a thought experiment or real-world experiment.

**OPTIONAL  
MATH** **$(x, y)$** 

Indicates that math follows, but is optional reading which is explained in either the preceding or following section.

- 1 -

***Investigating  
Gravity***

## *The Theory of Gravity*

### **Gravity as One of Four Basic Forces in Nature**

Gravity is one of the most fundamental and familiar forces of nature. As such, before discussing gravity in particular, it is important to clarify what the forces of nature are considered to be and how they relate both to Standard Theory and to our ultimate quest for understanding. Although Standard Theory is a composite of many sub-theories, some of which were listed earlier in Figure 1-1, most scientists believe the search for the Theory of Everything is a quest to understand and unify what are currently considered to be the four separate fundamental forces of nature:

- ***Gravity*** – the familiar attraction between all matter, first described by Isaac Newton.
- ***Electromagnetism*** – the closely related phenomena of electricity and magnetism, as well as electromagnetic radiation such as radio waves and light.
- ***Strong Nuclear Force*** – a powerful, short-range force thought to be holding atomic nuclei together. Atomic nuclei have many positively charged protons in close proximity, which should strongly repel each other and cause the nucleus to fly apart according to the theory of *Electric Charge*. Therefore, the concept of an attracting *Strong Nuclear Force* between protons in the nucleus was introduced to explain how the nucleus is held together in apparent violation of *Electric Charge Theory*.
- ***Weak Nuclear Force*** – another nuclear force, considered to be much weaker than the *Strong Nuclear Force*. Phenomena such as the random decay of populations of subatomic particles (i.e. radioactivity) were difficult to explain until the concept of this additional nuclear force was introduced.

It is currently believed that these are the four fundamental forces in nature, and that, in essence, they are merely different manifestations of one single underlying force or principle that has so far eluded science. To discover this underlying force or principle would be to arrive at the Theory of Everything since, at a glance, it would show the single underlying cause for every observation, belief, and theory in science today. Such a unified understanding is expected to transform the patchwork of separate abstract theories in Standard Theory into a much simpler, coherent whole that shows a true *physical* explanation for everything, sparking a scientific revolution.

The new theory discussed throughout these chapters suggests that while this vision is the proper intuition, there are several reasons why success has eluded us so far. First, since we obviously lack the deeper understanding that we are seeking, we cannot be certain we have properly identified the fundamental forces of nature. If, for example, our theory of *Electric Charge* is an imperfect model of the true underlying principle behind many of our observations, then our current model of proton behavior as positively charged particles that always repel each other may not be an accurate description of the nucleus of an atom. Instead, it may be perfectly natural for protons to cluster together when in the nucleus of an atom, according to an undiscovered principle in nature that may have been misunderstood and represented as a “positive electric charge” upon protons. That is, in many situations protons may behave *as if* they literally possess our concept of a “positive charge,” but this behavior could also arise from a very different principle – one that causes them to naturally cluster together when in an atomic nucleus. In that case, the concept of a “*Strong Nuclear Force*” keeping the nucleus from flying apart would be a completely unnecessary fabrication, and our attempts to find a unifying theory would be based in part on a force that doesn’t even exist. Our current goal of unifying these four forces may be based on such flawed assumptions from the start.

Secondly, much of our current and largely mathematical approach to finding a unifying theory may be straying from the original spirit and purpose of the quest. The goal of a new and deep physical understanding of our universe may be in danger of merely becoming an exercise in mathematical manipulation of our current equations. Since

arrival at this deep physical understanding is expected to yield a common mathematical framework for all the forces of nature, it is often assumed that if we simply pursue this mathematical end result directly – using our current models – we will achieve this deeper understanding. However, this approach may be unsound since it assumes we have correctly identified the fundamental forces of nature and simply need to rearrange our mathematical models. Yet, if this turns out to be an incorrect assumption, then such an approach would only achieve a largely meaningless mathematical link between flawed models of the physical world. This approach also risks trivializing our search for deeper *physical* understanding into an attempt to achieve a mere *mathematical* goal, bringing no deeper meaning. We may expect mathematically unified models to emerge once we achieve a deep physical understanding of our universe, but this does not necessarily mean this deep physical understanding will emerge by mathematically unifying our current models. It is possible that this approach may provide some useful insights, but it may also result in little more than contrived mathematical relationships between essentially the same equations modeling the same limited physical understanding we have today.

For the reasons mentioned above, the discussions of this new “theory of everything” in the coming chapters do not strictly follow the format of a mathematical unification of the “four fundamental forces” in nature. In fact, there is very little math and only loose references to these forces amidst a broad and rich discussion of science in clear physical and common-sense terms. The discussions do, however, begin with the first of these forces – *gravity* – showing the numerous problems with our current gravitational beliefs, and leading to an introduction of the new unifying principle behind a new theory of gravity that resolves these problems. Once this new principle is established, it does indeed ripple through the rest of Standard Theory in the chapters that follow, not only redefining our concept of the “four fundamental forces,” but redefining the complete patchwork of theories in science today in clear physical terms.

## The Trouble with Gravity

*Newton's Theory of Gravity* is undoubtedly one of the most universally recognized and accepted theories in all of science. It has become so deeply ingrained in our thinking and our science over the centuries that this theory has largely become synonymous with the very phenomenon of gravity itself. It is almost inconceivable today to separate our everyday experience of gravity from Newton's proposal of an attracting force emanating from all matter; yet, as shown in the following discussions, Newton's theory actually contains many unexplained mysteries and scientifically impossible claims. Such problems should prevent any new theory from becoming widely accepted as fact, leaving it only with the status of a proposal or *hypothesis*; however, the compelling nature of Newton's proposal combined with the lack of a more viable theory has meant that it has largely escaped such scrutiny.

### WATCH FOR...



- Newton's theory of gravity does not explain *why* objects attract one another; it simply models this observation.
- There is no known power source supporting the gravitational field that Newton claims to be emanating from our planet and from all objects.
- Despite the ongoing energy expended by Earth's gravity to hold objects down and the moon in orbit, this energy never diminishes in strength or drains a power source – in violation of one of our most fundamental laws of physics: the *Law of Conservation of Energy*.
- These mysteries and violations are overlooked today because of a flawed explanation that arises from the improper use of an equation known as the *Work Function*.
- Every effect explained by Newton's theory of gravity today is accurately modeled by *non-gravitational* equations that existed even before Newton.
- Newton's gravitational force is actually an entirely redundant and superfluous concept providing no additional usefulness and having no proven existence in nature or scientific support.

## Newton's Error – Violations of the Laws of Physics

Gravity is one of the most familiar and important phenomena in nature. Although it has always been known that *something* obviously causes objects to fall, it wasn't until Isaac Newton (1642-1727) that we had a clear model of this *something* as an attracting force emanating from all matter in a manner that is precisely describable via an equation. Newton also claimed that this very same attracting force was responsible for the orbits observed in the heavens, making our universe as comprehensible and predictable as a clockwork mechanism for the first time in history. This was such a monumental achievement in Newton's day that it set the stage for other models of forces described by equations in similar fashion ever since.

Although today we commonly speak of such forces, it is often overlooked that modern science still has little or no solid physical explanation for many of them. The legacy of theories and equations that compose our body of scientific knowledge today works rather well, making it easy to forget that these are largely *abstract models* – not solid physical explanations. Newton was the first in a long line of scientists to produce explanatory models for various classes of phenomena, which can be very compelling and useful but cannot be fully explained in physically meaningful and scientifically viable ways even today.

In fact, there was a strong undercurrent of resistance to Newton's gravitational force concept when it was introduced, since it seemed to represent an almost magical force at a time when solid rational thought was finally beginning to prevail over the mysticism and superstition of ages past. Today, largely as a result of the scientific acceptance of Newtonian gravity, we have grown accustomed to the idea of unexplained forces reaching across empty space to affect objects at a distance in some equally unexplained manner. We have even grown accustomed to the fact that many of these forces (gravity, magnetism, electric charge, etc.) have no known power source. However, in Newton's time such concepts were only known in stories of myth and magic. To philosophers such as René Descartes (1596-1650), it had been a long journey for society to shake off the mysticism of the past and finally enter a welcome era of solid rational thought and debate.

In fact, Descartes himself had an earlier and widely accepted *physical* theory of orbits that claimed the planets were dragged along by an invisible material, known as the ether, which presumably swirled around the sun. Although this theory had its own problems, in this era of rationality many considered Newton's idea of a completely unexplained force acting across empty space to be an unwelcome return to the magical thinking of the past. Newton realized this fundamental problem with his theory of a gravitational force, and never claimed to be able to explain it. However, the compelling and rational nature of his accompanying mathematical model soon solidified the force of gravity as a physical reality and a scientific fact that continued to grow in acceptance for centuries, being the predominant theory even today.

It is important to note, however, that although it is generally recognized that Newton's gravitational force lacks a proper physical explanation, the much larger issue – that it *violates the laws of physics* – has gone almost entirely unnoticed. This point will be clearly illustrated, beginning with a reminder of one of the most fundamental and unbreakable laws of physics – *The Law of Conservation Of Energy*.

LAW



### **The Law of Conservation Of Energy**

**Energy can neither be created nor destroyed, but merely changes from one form to another.**

This is one of the most fundamental and unbreakable laws of physics, serving as a test for the scientific validity of any proposed theory or invention. If a proposed theory or device either uses or produces energy it must draw on an existing power source to do so, merely transforming energy from one form to another in the process. For example, the stored chemical energy in gasoline changes to kinetic energy as it is “used up” to accelerate a vehicle. In accordance with the *Law of Conservation Of Energy*, the chemical energy in the gasoline does not actually vanish, but is converted into another form of energy – the kinetic energy of the vehicle's motion. Similarly, the kinetic energy of the vehicle did not simply appear out of nowhere, but was converted from an existing

chemical energy source – the gasoline. Although we commonly refer to power sources being *drained*, what we actually mean by this is that the energy from a given power source is converted into another form of energy elsewhere. This is the law that tells us perpetual motion machines are impossible since they are considered to be devices capable of producing or expending energy continually without draining a power source. There is no such thing as “energy for free” in our science. Free energy devices violate our most elementary laws of physics.

Also noteworthy, once it was realized that energy (denoted by the symbol  $E$ ) and matter (denoted by  $m$  for mass) can change form back and forth, modeled by Einstein’s famous equation  $E=mc^2$ , the *Law of Conservation Of Energy* included *matter* as one of the energy forms. The explosion of an atomic bomb, for example, does not actually *create* the enormous amount of energy in its explosion, but is considered to *release* it by converting its original core of matter into energy. Therefore, in all things the *Law of Conservation Of Energy* must be upheld.

**VIOLATION**

**Newton’s Gravitational Force Violates the *Law of Conservation Of Energy***

There is nothing in Newton’s gravitational theory stating that the force of gravity weakens as it expends energy. The mass of the moon exceeds one percent of the Earth’s mass and would fly past the Earth and off into space if not forcefully constrained by gravity to circle the Earth, according to Newton’s theory. Yet this tremendous continual effort expended by Earth’s gravitational field is not considered to diminish the strength of this field at all – millennium after millennium.

Returning to the vehicle analogy, when a car increases its speed it is said to accelerate, which is only possible by drawing on a power source, converting its energy into the car’s increased speed or kinetic energy. Turning the vehicle in a circle is another form of speed change or acceleration, involving a constant, forced change from its natural straight-line direction of travel. This continuously forced circular direction change is known as *centripetal acceleration*, and also requires energy to maintain this constant diversion from the natural straight-line

path of objects. Likewise, the natural forward momentum of the moon would carry it away from our planet and off into space in a straight line if gravity were not forcefully pulling it into a circular orbit moment by moment. Yet this tremendous energy expenditure is not balanced by a conversion of energy from any known power source. This is a *creation* of energy from nothing – energy for free – rather than a *conversion* of energy from one form (a power source) to another (circular centripetal acceleration). This situation is a clear violation the *Law of Conservation Of Energy*.

Gravity also forcefully holds down all objects on the surface of our planet, which would drift off into space otherwise. In fact, the pull of gravity holds our very planet together, creating tremendous crushing forces within the center of the Earth. This has been going on for well over 4 billion years, yet no known power source is being drawn upon to support this tremendous ongoing energy expenditure.

This mystery is further deepened when we consider that not only is there no *drainage* of energy from a power source to support the effort expended by the gravitational force, but in fact there is *no power source at all*. A gravitational force is considered to emanate from within each atom of matter, adding up to the tremendous overall gravity of the Earth, yet we still have no explanation for its endless power source despite having created detailed atomic theories – and even having split the atom. This is a textbook case of an impossible free energy device.

This discussion naturally raises the question of why such a fundamental violation of our laws of physics doesn't generate intense scientific concern, curiosity, and investigation. Why is Newtonian gravitational theory simply accepted and its mysteries left uninvestigated? This question brings a curious mixture of responses. One answer is that science *has* responded to these concerns by accepting a very different explanation of gravity proposed by Albert Einstein (1879-1955) known as *General Relativity Theory*, which will be explored further in later discussions. However, Einstein's theory offers no solutions to these problems either. In fact, these violations are not generally acknowledged as the reasons for accepting Einstein's alternate theory of gravity, nor are these violations even generally acknowledged at all today.

Perhaps more curious is the fact that even though *General Relativity Theory* is generally accepted in academic circles as the proper description of gravity, it is not widely taught or used by engineers and physicists – usually being reserved for optional or advanced study, and mostly for rare and exotic applications. Most university science and engineering graduates know little or nothing about Einstein’s theory of gravity despite the fact that it is presumably the true explanation of this phenomenon, and it is not generally used in our space programs. Newton’s concept of gravity is by far the main gravitational theory used in space missions today, despite the fact that there was apparently good reason to accept Einstein’s quite different theory of gravity into our science. All of this further deepens the mystery surrounding gravitational theory today, so let’s take a closer look at these issues starting with the currently unrecognized law violations in Newtonian theory.

The serious law violations and mysteries found in Newtonian gravitational theory have just been clearly pointed out in reference to one of our most fundamental laws of physics, yet science does not generally recognize these violations. How can this be? Why might those who are the most highly educated in physics be the least likely to acknowledge these mysteries and violations? The answer is that when Newton’s theory of gravity is taught, it is usually accompanied by further instruction on how to resolve these mysteries and violations by referring to an equation called the *Work Function*. Although it will be shown shortly that this is a fatally flawed explanation attempt that gives a false sense of closure on these issues, this fact is overlooked by our educational institutions today since there is no other explanation for Newtonian gravity. Therefore, all properly educated scientists have firmly learned the standard (though erroneous) logical techniques that have been taught for generations to provide ready answers for the mysteries and violations of Newtonian gravity. This leads to the curious fact that, on the one hand, science found it necessary to search for and accept such alternate gravitational theories as Einstein’s *General Relativity Theory*, while on the other hand, Newtonian gravity is still widely accepted by scientists. This makes the *Work Function* an important pivotal element in this whole mystery, and therefore worthy of a closer look.