THE EXPLANATION OF DARK MATTER & DARK ENERGY, HOW & WHY THEY EXIST, HOW THEY WORK, IN ORDER THAT WE MAY USE THEM

By David R. Justian, J.D.
NEWTON’S DARK GRAVITY
THE SOURCE OF THE DARK FORCES
OF DARK MATTER & DARK ENERGY

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Dedication
This book is dedicated to each of my eight grandsons and to all of every grandchild, the children of the future.
PREFACE

The 21st Century... by now we know that Newton’s Laws of Motion and Gravity have different attributes and manifestations depending upon whether we are investigating the realm of the physical at the level of our perceptual gravitational existence or at a de minimis gravitational level requiring quantum mechanics or at the dark but perceived gravitational level of cosmology. This book is an “Alternate” scientific theory that explains Dark Matter and Dark Energy for the reason that it is unacceptable to anyone having any knowledge of physics. Any scientist worth the degree status they hold has not accepted Newton’s Laws of Motion and Gravity as the source of or explanation for Dark Matter and Dark Energy. This book is for those who know their history of science, that scientists are usually captive to the science of yesterday that they learned in school, and who know that the Truth is not easily dispersed. Have at it and enjoy a good Alternative Theory of Newton’s Dark Gravity.
DEFINING DARK MATTER & DARK ENERGY

What is Dark Matter? We know what it does. It holds a galaxy and a galaxy cluster together. Scientists as a group do not have a clue as to what Dark Matter is. The best definition of Dark Matter that I have seen, other than my own, is that given by NASA on its web site, http://science.nasa.gov/astrophysics/focus-areas/what-is-dark-energy/;

“We are much more certain what dark matter is not than we are what it is. First, it is dark, meaning that it is not in the form of stars and planets that we see. Observations show that there is far too little visible matter in the Universe to make up the 27% required by the observations. Second, it is not in the form of dark clouds of normal matter, matter made up of particles called baryons. We know this because we would be able to detect baryonic clouds by their absorption of radiation passing through them. Third, dark matter is not antimatter, because we do not see the unique gamma rays that are produced when antimatter annihilates with matter. Finally, we can rule out large galaxy-sized black holes on the basis of how many gravitational lenses we see. High concentrations of matter bend light passing near them from objects further away, but we do not see enough lensing events to suggest that such objects to make up the required 25% dark matter contribution.

However, at this point, there are still a few dark matter possibilities that are viable. Baryonic matter could still make up the dark matter if it were all tied up in brown dwarfs or in small, dense chunks of heavy elements. These possibilities are known as massive compact halo objects, or "MACHOs". But the most common view is that dark matter is not baryonic at all, but that it is made up of other, more exotic particles like axions or WIMPS (Weakly Interacting Massive Particles).”

What is Dark Energy? We know what NASA says it does. NASA says it forces the Universe's expansion. Scientists do not have a consensus, as a group, as to what causes
the expansion effect of Dark Energy. The best definition of Dark Energy that I have
seen, other than mine, is that given by NASA on its web site,

http://science.nasa.gov/astrophysics/focus-areas/what-is-dark-energy/;

“More is unknown than is known. We know how much dark energy there is
because we know how it affects the Universe's expansion. Other than that, it is a
complete mystery. But it is an important mystery. It turns out that roughly 68% of
the Universe is dark energy...One explanation for dark energy is that it is a
property of space...The thing that is needed to decide between dark energy
possibilities - a property of space, a new dynamic fluid, or a new theory of gravity
- is more data, better data.”

Fritz Zwicky

Vera Rubin

In 1933 Fritz Zwicky, an astro-physicist reported his observation that far away
galaxy clusters were circling each other at a speed that was impossible unless they
should fly apart. But they weren't separating. Zwicky said that something was holding
the galaxies together in the cluster, some kind of Dark Matter. In 1970, astro-physicist
Vera Rubin reported that galaxies, just like the galaxy clusters that Zwicky saw, were
spinning too fast to exist. At the speed the galaxies were spinning, they should have
been flinging out stars. Rubin also reported that the stars on the outer rim of the disk
of the galaxy were going the same speed as the stars at the center of the galactic disk, an impossibility without some type of force that simply could not be observed. Zwicky's Dark Matter was at work within a galaxy just as it was within a cluster of galaxies.

This is a NASA photo of a galaxy. It's like the spinning galaxy that Vera Rubin saw. She saw a hundred billion stars spinning too fast to stay together without an additional force of some kind. She recalled the Zwicky report of galaxy clusters circling too fast to stay together and used his term, Dark Matter, to explain the phenomenon. Rubin said that it remains her hope that Newton's laws would hold sway over a very large domain, such the very large domain seen by cosmologists.

A Harvard physics professor, Lisa Randall, has recently proposed that there may be different types of Dark Matter. One type can be seen as a halo, or hue, that is displayed later, while another type lies within a galaxy like a dense but thin disk with a significant gravitational, meaning attractive, force. Randall's recent book released in
2015, “Dark Matter and the Dinosaurs” suggests the possibility that a comet from what she believes is the Oort Cloud, collided with Earth. The collision caused the fortunate extermination of the likes of Tyrannosaurus Rex and other Earthly flora and fauna of the time. A possible cause of the collision, according to the book, is a type of Dark Matter located as a gravitational force within the Milky Way. Randall is, I believe, the first physicist to consider Dark Matter to be a gravitational force strong enough to impact a galaxy and its constituent parts. It's a great book, I certainly advise that you buy it.

Saul Perlmutter, Brian P. Schmidt and Adam D. Riess shared the 2011 Nobel Prize in Physics for their work in providing evidence that the expansion of the Universe is accelerating. They believe that Dark Energy is the cause for the expansion but, like the scientists at NASA, don't claim to know what Dark Energy is.

Dark Energy was reported in 1998 by a team consisting of Saul Perlmutter, Brian P. Schmidt and Adam D. Riess. They observed that the Universe is expanding at an ever accelerating rate. Schmidt suggests possible alternative causes to the accelerating
expansion; (1) that Albert Einstein's General Relativity, used in the teams calculations, is wrong, or (2) the points of measurement, the Supernovae, were miscalculated or mismeasured. However, since 1998 there have been many opportunities to remeasure the Supernovae and review Einstein's Theory of General Relativity and there are no mistakes in either area that anyone has found. There is no generally accepted, or even a serious candidate, for what is causing the expansion of the Universe at an ever increasing rate. This book suggests that Newton's Laws, including his Law of Universal Gravitation are serious candidates for what is causing the expansion of the Universe at an ever increasing rate. As Vera Rubin, the famous cosmologist, had hoped, Newton's Laws hold sway over a very large domain. If it can be suggested by a Nobel prize winner that Einstein's General Theory of Relativity doesn't work in an instance, perhaps, as hoped by Vera Rubin, Newton's Laws should be considered to explain Dark Energy.

“Scientists have a number of hypothesis for what might be driving (emphasis added by Justian) the acceleration of the universe.” The article continues; “The leading candidate arises from the nature of empty space. In quantum physics a vacuum is not “nothing” - rather it is teeming with pairs of “virtual” particles and antiparticles that spontaneously appear and annihilate one another within a tiny fraction of a second. As strange as it may sound, this sea of ephemeral particle pairs carries energy, and energy, just like mass, can produce gravity.”

They state that energy from a vacuum pressure can create a “repulsive gravity driving the accelerated expansion of the universe”. Newton's Law of Universal Gravity allows for the attractive gravitational force of mass, however the “repulsive/driving” force of a vacuum's negative pressure is an unknown force especially where the 'vacuum' is full of the cumulative mass-density of virtual particles. Instead of a repulsive/driving force, consider centrifugal or centripetal forces, both of which fit within the requirements of Newton's Laws and would work. In fact, the cumulative mass of virtual particles could be present in globules, or bubbles of sufficient size and density to attract the galaxies of the Universe.
Francis Bacon was an attorney, as I am, I hasten to mention this due to an unbounded ego, who learned that developing evidence in the law was similar to developing evidence in physics. Bacon is credited with developing the scientific method later used by scientists including Isaac Newton. The scientific method is used to investigate phenomena by inquiry based on observable, measurable evidence with the results capable of being repeated or replicated. With Dark Energy many astro-physicists have replicated the observations and the measurements of Perlmutter, Schmidt and Riess and have come up with the same result that the Universe is expanding at an ever accelerating rate. But why? The discoverer's of Dark Energy don't know, but you do. The observational data requires that the answer is Newton's Law of Universal Gravitation meaning that the galaxies are accelerating in a straight line toward a more massive object, a Dark Space filled with particles with a cumulative mass.

In order to attract the galaxies the force must be concentrated in globules or bubbles of dense mass. Why are such concentrations required, because a uniform density surrounding the Universe would result in an equilibrium, a static Universe that will eventually exist, but not for a while.
This is Isaac Newton. He was a smart person who drafted a number of laws about motion and gravity.

It is believed by almost everyone that his laws do not apply when applied to high velocity, really small 'quantum mechanic-like' distance, or high density environments, for which Albert Einstein's Special Relativity or General Relativity prevail. However, some scientists are now questioning whether the General Theory of Relativity is the proper tool to use to explain Dark Energy. First, let's take a look at Newton's Laws of Motion, there are three of them, called the Newton's First Law of Motion, the Second Law of Motion and the Third Law of Motion.

NEWTON'S FIRST LAW OF MOTION

First Law: Every object in a state of uniform motion tends to remain in that state of motion unless an external force is applied to it.
The first law says that an object at **rest** tends to stay at rest. Contact with a fast moving foot is an external force acting upon the orange ball pictured above, excising the ball from a state of rest. Also, an object in **motion** tends to stay in motion, with the same direction and speed, like a falling boy. The boy will not fall to the center of the Earth only because his downward motion will soon be stopped. Motion (or lack of motion) cannot change without an act of force. If no external force acts on an object, it will never move and, if it is moving, it will continue to move at the same speed and will continue to go in the same direction. Like a photon.

**NEWTON’S SECOND LAW OF MOTION**

**Second Law**: The relationship between an objects mass \(m\), its acceleration \(a\), and the applied force \(F\) is \(F=ma\). In this law the direction of the force is the same as the direction of the acceleration. Another way of stating the Second Law is: the greater the mass of an object, the more force it will take to accelerate the object. The Second Law shows that if you exert the same force on two objects of different mass, you will get different accelerations. The acceleration of the smaller mass will be greater. Using the same
force to push two children of different mass on swings will result in the child with the smaller mass going faster and higher than the other child. With the result being some dismay by the heavier child who will now want to go faster and higher too.

NEWTON'S THIRD LAW OF MOTION

The third law states that for every action, there is an equal and opposite reaction.

The above photo is a swing that was pulled forward and then released. The energy used in pulling the swing is equal to the energy expended in the slowing back and forth swinging. The photo below demonstrates the ball about to be hit with unimaginable force causing the ball to engage in an equal and opposite reaction. Home run! If this were a book for elementary students I would use a photo of a rocket ship but, you have the idea. There is a balance in the Universe between action here, and an
THE IMPORTANCE OF NEWTON’S LAWS OF MOTION AND DARK GRAVITY AND DARK MATTER AND DARK ENERGY IN THE SCHEME OF THINGS HERE AND NOW: WE CAN ACT AND REACT TO PHYSICAL REALITY.

Compared to eating an ice cream cone in warm weather, or a great catch when ice fishing, Newton’s Laws and Dark Matter and Dark Energy seem less important to everyday life. Still, it is fun trying to explain these things to grown men and women who disagree that there could possibly be a cumulative effect of tiny particles having sufficient mass to be an attractive force holding a galaxy together, a Dark Matter, or a massive globule or bubble like object attracting galaxies from the Universe at an ever increasing rate of acceleration, a Dark Energy, due to a centripetal force.
A great quote of Newton is;

“A man may imagine things that are false, but he can only understand things that are true, for if things be false, the apprehension of them is not understanding.”

There aren't a lot of explanations for either Dark Matter or Dark Energy. Those that have been offered are difficult to understand. That is okay if we are all satisfied that nature can only be understood by mathematicians and scientists but can't be understood except by having a college degree in the sciences. Also, that might be okay if the scientists all agreed with each other. But they are not in agreement as to an understandable explanation of Dark Matter or Dark Energy. Yet, you do understand that the application of Newton's Law of Universal Gravitation explains Dark Matter and Dark Energy. So it can be true. Aristotle said that a thing cannot both be and not be. A galaxy cannot both exist and not exist. Aristotle also said that given a definite state or quality a thing must either have it, or not. Meaning in this case, a galaxy spins too fast to stay together, therefore it avoids centrifugal force, or it does not. Of course, a galaxy avoids centrifugal force. What is the proximate cause of such avoidance? Newton's Universal Law of Gravitation is the answer. That Law is the reason we are not flung from the surface of the Earth, and why the stars are not flung away from a galaxy. Newton's Law of Universal Gravitation also explains Dark Energy. Either centrifugal force or centripetal force are at play, with galaxies being flung by a spinning Universe, or
alternatively galaxies being attracted by globules or bubbles of dense matter that exist beyond our perception, except our mental and intellectual perception and powers of deduction through thought experiment and personal experience with nature.

Everyone who has ever fished has learned about gravity even though Newton is hardly ever thought of by fishers of fish while fishing. Try lifting a heavy fish, like the one in the photo above, without running into gravity. Newton also drafted the Law of Universal Gravitation. It simply states this; “The gravitational attraction between two bodies increases rapidly as the distance between them decreases”. So, the apple begins its fall towards Earth. Earth, of course, is a much greater mass than the apple, at 32 feet per second, the apple accelerates to a speed of 64 feet per second by the end of the second. By the end of the third second the apple is traveling at an increased rate of 96 feet per second, and so on. Each second the apple gets closer to the Earth it adds 32
feet per second to its speed.

As Vera Rubin hoped, Newton's Laws hold sway over a very large domain. Do they hold sway over the galaxies that are increasing their acceleration outward from the Universe? The answer is, “Yes”. Do Newton's Laws give an explanation as to what could cause galaxies to increase their acceleration outward? The answer is, “Yes”.

Our scientists have noticed that galaxies are accelerating at an ever increasing rate. What role would an ever decreasing distance between a massive object and galaxies play in the increasing acceleration of the galaxies? Clearly, the distance between the galaxies and a greater massive object, imperceptible to our senses, is decreasing because observational data states that the galaxies are increasing their rate of acceleration. Consider a galaxy to be an apple, as it falls toward Earth, a massive object, the distance between the apple and the Earth decreases.

Every observer knows, or can perceive from their own frame of reference if they lack a sense of reality, that they are being still and that the rest of the world is moving about them. Swinging from a rope tied to a tree limb causes the wind to blow across the face, but lacking the wind it might as well be the world that is swinging to and fro. Professor Albert Einstein developed his General Theory of Relativity and Special Theory of Relativity now used by astro-physicists to understand our Universe. Brian Schmidt
said that he and Saul Perlmutter and Adam Riess used Einstein's General Theory of Relativity when they concluded that the Universe was expanding at an ever accelerating rate. The use of the General Theory of Relativity was needed to explore the expansion of the Universe and the use of Newton's Laws of Motion and Law of Universal Gravitation would have a different use. The math of the General Theory of Relativity has yet to provide a clue as to the reason behind the acceleration. However, by observing the effects Newton's Universal Law of Gravitation we are provided with observational data, that is, for the same reason the apple increases its speed when it falls towards a more massive body, the galaxies are increasing their rate of acceleration towards a more massive object.

Are the galaxies going in all directions in a straight line towards a more massive body that surrounds the Universe? They can be observed to do so, at an ever increasing rate of acceleration. Our experience requires that the attractive force, if there is an attractive force, is not of uniform density surrounding the Universe. An alternative to an attractive centripetal force caused by a massive object is centrifugal force caused by a spinning Universe flinging the galaxies outward. The spinning Universe flinging galaxies away from itself is a stretch of imagination but a little fun in science is...fun.
Another word about Dark Matter: Hubble photos, released by NASA, are claimed to show the type of Dark Matter hue, or halo described by Lisa Randall in her book, “Dark Matter and the Dinosaurs”. Notice that the hue, or halo, is splotchy, broken, uneven and leaves room for expansion. This would indicate that if, as Lisa Randall and many others (meaning Justian) believe, Dark Matter has a different but more dense composition than the surrounding space that is not a blue hue or halo. It is quite likely, as Lisa Randall believes, that the Dark Matter that surrounds galaxies and galaxy clusters is to be found inside a galaxy also.

No, the blue hue or halo is not Dark Matter. Dark Matter does not radiate electromagnetic anything, or light. What is shown in the photos are the effect Dark Matter has on light that bends around invisible particles that we see through a process called gravitational lensing.

This is an illustration of Dark Space. Those little white spots, if you can see them, are really not visible and are there only to illustrate the existence of virtual particles pairing with antiparticles and thus annihilating the pair resulting in an energy, or mass. Adam D. Riess suggests the possibility that Dark Energy could be a repulsive/driving energy. My book maintains that the resulting mass of
virtual particles or other particles would result in an attractive gravitational force sufficient to attract the galaxies of the Universe at an ever increasing rate of acceleration. I don't believe that Adam D. Riess has closed the door upon the possibility that a positive/attractive mass, and not a negative energy, results in Dark Energy.

According to Cold Dark Matter theorists there is a very dense layer or region of Dark Matter in a galaxy. Dark Matter has a significant gravitational attraction in the Milky Way that, according to Lisa Randall, creates a wobble of the Solar System's trajectory as it travels around the galaxy which, in turn, causes a perturbation of the comets comprising what she believes is the Oort Cloud.

There is observable evidence that Dark Matter is the result of a dense mass permeating the less dense Universe. This means that within the Universe there are Dark Matter globules, or bubbles, raising the possibility that as with nature on Earth, that the cosmos is a 'fractal' system where the same elements of nature are repeated with ever larger, or smaller, versions. Dark Matter, with its dense mass that becomes a part of each galaxy makes each galaxy and cluster of galaxies an object with a gravitational attraction sufficient to hold its constituent stars and clusters of galaxies
together, consistent with Newton's Law of Universal Gravity.

NASA scientists, as stated on its web site, believe that the Universe is likely one of three shapes (sphere, saddle shape, flat) though it says that it is almost certainly the flat design due to a critical density of matter within the Universe. Notice the density of the flat Universe above, the less dense parts are represented by the blue areas.

Here's my Dark Energy hypothesis: that Dark Energy is the result of the massive gravitational force of globules or bubbles outside the boundaries of the Universe that have a gravitational attraction consistent with Newton's Law of Universal Gravity.

Of course, there is room for debate as to the definition of the boundaries of the Universe, but there is something attracting galaxies. According to Newton's Laws the attraction of galaxies will continue until the Universe has thinned to the point that total permeation of the Universe by Dark Matter in the form of dense globules or bubbles of particles is achieved whereupon the Universe will become static.

Dark Matter is made of unseen matter. There is disagreement, or confusion, or bafflement regarding whether the matter is 'hot matter', meaning neutrinos or other matter that does not interact with electromagnetic radiation like light, or 'warm matter', meaning...well, it's
not certain that there is such a thing, and 'cold matter', meaning that the cold matter is believed to have existed from the very beginning of the Universe and, if they exist, includes 'Weakly Interacting Massive Particles', or WIMPs, Axions, and MACHOs. You can look these things on the NASA web site to learn more about these particles. http://science.nasa.gov/astrophysics/focus-areas/what-is-dark-energy/. Particles making up Dark Matter do not interact with light, except that you can see bending light waves through gravitational lensing, the bending of light waves is due to the gravitational effect of Dark Matter.

I grab on to the Cold Dark Matter (CDM) Theory because it explains what I think is the observational data and makes sense because it can be explained by Newton's Universal Law of Gravitation; that explanation is that in a galaxy the density of whatever Dark Matter is made of is greater within the central region of the galaxy and decreases slightly towards the perimeter of the galaxy but is strong enough to hold the galaxy together.

Peering over the edge of the Universe to see what can be seen might be disappointing for a number of reasons not the least is the fact that it would take you almost 15 billion years to reach the edge of the Universe. Don't forget, it takes light 2 seconds to reach you from the Moon.
minutes from the Sun, and 2 million years from the Andromeda galaxy. I can't even imagine 14 or 15 billion years. Yet, we creations of God are hard wired to ask the question, “What is over that hill”? We have a clue thanks to Newton's Law of Universal Gravitation;

“Every object in the Universe attracts every other object with a force directed along the line of centers for the two objects that is proportional to the product of their masses and inversely proportional to the square of the separation between the two objects”.

Or more simply;

“The gravitational attraction between two bodies increases rapidly as the distance between them decreases”

So, what's over the hill? Meaning, what's outside the Universe? It must be something very, very massive. Not a uniform density of mass, otherwise the galaxies would be held as if in limbo, but globules or bubbles of mass.

GETTING THE LOWDOWN ON GRAVITY

Whether Newton's Laws of Motion would permit a repulsive or negative energy is unknown for the reason that such energy is yet to be identified as a cosmological force. On the other hand, Newton's Law of Universal Gravitation, as an attractive or positive energy is proven as a cosmological force by observational data. Using the fractal theory for the smaller objects we will call a galaxy, a galaxy is more massive and is a strong
attraction for all constituent stars that are tiny by comparison. A Black Hole attracts light, and when light enters it does not leave. Energy and matter are equivalent but a Black Hole, if it is made of energy, is a positive attractive energy, not a repulsive energy. It is unlikely and is against any law of nature that Dark Energy is a repulsive/driving energy. Dark Energy must be an attractive/positive energy force.

The magnitude of the gravitational force of a massive object upon the galaxies hurtling towards it could be determined if only we knew the rate of acceleration of a galaxy. But we have no idea the rate of acceleration so we don't know how massive the hypothetical globules or bubbles of cumulative particles are.

ALBERT EINSTEIN'S GENERAL THEORY OF RELATIVITY & GRAVITY

In 2004 NASA verified the geodetic effect, the warping of space and time around a gravitational body, predicted by Einstein's General Theory of Relativity and also verified 'frame-dragging', the amount a spinning object pulls space and time with it as it rotates, also predicted by Einstein's General theory. Einstein's General theory also predicted gravitational lensing, proving the bending of light waves by massive objects.
Here is a photo of a white dwarf crossing a red star, this is a NASA illustration showing how the mass of the white dwarf bends the light coming from the red star:

"Cosmic acceleration represents a great challenge to our modern understanding of physics," said David Rapetti of the Kavli Institute at Stanford University. Adam Mantz, also of Stanford University, in a study of how galaxy clusters grow said, "Measurements of acceleration have highlighted how little we know about gravity at cosmic scales, but we're now starting to push back our ignorance."

Because the observations of the masses of galaxy clusters are directly sensitive to the properties of gravity, they provide crucial information about the growth rate of our Universe driven by gravity. The question: Is Einstein's General theory an exclusive theory that would put a stake into a theory that a massive object is driving the expansion of the Universe? The answer is, “No”.

THE SPINNING SPIRAL UNIVERSE
Isaac Newton described centripetal force as "a force by which bodies are drawn or impelled, or in any way tend, towards a point as to a centre". Pursuant to the Newtonian Laws, gravity provides the centripetal force responsible for astronomical orbits. The reaction force to centripetal force is centrifugal force where the force directs 'away' from the axis of rotation. It is reasonable to say that compared to centripetal force that centrifugal force is a negative, or repulsive force.

Under Einstein's General Theory of Relativity the warping of the fabric of space-time explains astronomical orbits. Both Newton and Einstein agree that there are objects that orbit other more massive objects and both agree that centrifugal force is a repulsive force, unlike centripetal force. 'Something' is tossing galaxies away from the Universe, but note also that galaxies are not supposed to be in an orbit. But what if they are in orbit and are not being tossed out of their orbit. Thanks to Rapetti and Mantz, who verified that a spinning object, such as spinning galaxy, pulls space and time with it as it rotates, we also know that the General Theory of Relativity is 'involved' with the expansion of the Universe. Anyone who has studied the fractal phenomenon of nature knows that fractalization exists at every scale of nature. It can be allowed by Newton's Laws that galaxies are a part of a spiral Universe being flung away from the center of the Universe, by a centrifugal force acting as a repulsive force, especially considering the applicability of the fractal theory. It is a common sense theory of the
expansion of the Universe that can be understood. But there is more evidence of centripetal force.

CONSIDER THE CUTE PARTICLES OF SPACE

We can, and most of us do, go through our whole life unaware of neutrons, WIMP's, axions, virtual particles and anti-particles and all types of MACHO particles as described by NASA in a previously identified web site. We haven't found any particle suspects of Dark Matter yet. As Vera Rubin said, space is huge and the particles are far apart, and finding one is more difficult than finding a needle in a hay stack. By the way, imagine that haystack as big as your house. Considering the effects of Dark Matter and Dark Energy, there must be a whole lot of the particles. The particle field must be very dense. But what are they?

What else but a dense, tightly packed, particle field could possibly exert such a powerful gravitational attraction on the constituent stars of a galaxy that would keep a spinning galaxy from flying apart as well as keep the stars rotating on the outside of the galaxy rotating at the same speed as stars in the center of the galaxy?

One reason why we can't capture a particle of the likes of a MACHO or a WIMP is that they might not be moving around, very much. They may exert a linking force with one another so that individually they don't exist, statistically speaking. Anymore than
Earth's humans exist in the Universe, statistically speaking. However, the cumulative effect of weak, barely existing, particles linked together by a weak force field may have the effect of being a dense mass. In such a case, we would never find a MACHO, a WIMP, a virtual particle or any of the usual suspects.

I posted my first version of what I called my Virtual Force Theory on YouTube in 2005, explaining Dark Matter and Dark Energy in a video entitled “The Kingdom of Forever”. It concerned the huge cumulative mass of particles, that I believed were likely to be virtual particles, in the space beyond the Universe. By then I had known about the Cold Dark Matter (CDM) Theory but it was my thought that it didn't take the force of gravity into consideration. My theory has changed somewhat to conform with what is now known to all scientists. There is a dense region of Dark Matter in the center of a galaxy. Also, Dark Matter in the form of globs or bubbles is also present around cosmological objects, such as a galaxy or a galaxy cluster. There is a dense cumulation of matter where the particles comprising the dense mass do not move individually. My initial attempt to think things through is still available on YouTube, though it is a bit embarrassing I do define my understanding of the cumulative effect of almost massless particles in such a large Dark Space and now add the fact, I believe, that the particles do not move individually and will never be 'found' by capture. After all, we are now surrounded by, and permeated by, the elusive particles of Dark Matter. To see the
2005 video try this,  https://www.youtube.com/watch?v=QC5UsF01dV0

(A Photo of Dark Energy Goes Here, When it is Available, LOL)

THE ENERGY DENSITY OF DARK ENERGY

The question of how to quantify 'energy density' of Dark Energy takes a lot of research money, to pay for thinking space in library's, offices, labs, class rooms, and for the thinkers take-home pay too. The smart money for those who oppose an attractive gravitational force is on the thinking that Dark Energy has a negative, or repulsive, pressure spread more or less uniformly throughout the Universe. This would, in a manner of speaking, explain why a galaxy would shoot out from point A to point B, with point B being at the out lying boundaries of the Universe, like a bullet from the barrel of a gun., or some liken the expansion of the Universe to a loaf of raison bread raising on the kitchen counter, with the raisons being the stars. Depending upon your philosophy about what Dark Matter might be, the factors involved in a mathematical formula as to its energy density will change. The simplest explanation for the energy density of Dark Energy for the 'repulsive' denomination of physicists is to conform the math to observation. Negative energy is a hypothetical concept allowed by a mathematical formula using renormalization. Unfortunately, mathematics frequently diverges from physical reality. There is another problem with energy density; the problem is that it is
too weak to cause a repulsive energy of sufficient quantity to propel a galaxy at an ever increasing rate of acceleration. The repulsive energy of Dark Energy, as defined by mathematical formula, could not even push a paper clip across the galaxy, let alone the Universe at an ever increasing rate of acceleration. Also, what is the rate of acceleration? Don't ask. However, there is observational evidence via the red shift seen in photos, meaning that the galaxies are moving away from the observer. We just cannot measure the rate of speed of an increasing acceleration and because of the lack of that information we cannot measure the density of the mass needed to attract the galaxies.

THE STANDARD MODEL OF COSMOLOGY

The cosmological constant in mathematical formula is given a Greek letter for the sake of simplicity and that letter is the Lamda, or the capital “L”. It is also accepted that Dark Matter is Cold, as opposed to the previously mentioned hot or warm matter, so its referred to as Cold Dark Matter (CDL). Hence, the LCDM Model of Cosmology. meaning; the Lamda Cold Dark Matter Model of Cosmology, or simply the LCDM model. See, http://www.physics.rutgers.edu/~gawiser/608/.

Where does the LCDM model come from? It started with Albert Einstein in 1915,
when he presented the world with his General Theory of Relativity with his mathematical field equations. Alexander Friedmann, a Russian physicist, simplified Einstein's field equations in 1922, a few years before his death in 1925. The Friedmann equations presented a uniform, homogenous Universe that was expanding. In 1925, Edwin Hubble published his findings that distant galaxies travel away from us at an ever increasing rate with increasing distance. A few years after Friedmann's equations were published and Hubble's expanding Universe was announced a Belgian, Monsignor Georges Lemaitre, built upon the Einstein field equations and the Friedmann equations and Hubble's findings regarding an expanding Universe. He published what was to be called, “The Big Bang” theory in 1927. After all is said and done, it is fair to say the Friedmann equations are the basis of the present LCDM model though they are simplifications of Einstein's field equations, and they led to the further research and discoveries of LeMaitre and Hubble.

See: http://nasasearch.nasa.gov/search?utf8=%E2%9C%93&affiliate=nasa&query=COBE

COBE showed that the radiation's spectrum agrees exactly with predictions based on the Big Bang theory. And COBE's map of slight hot and cold spots within this background let scientists glimpse the roots of cosmic structure we see around us today. Well, not 'we', but 'they', because we don't actually see a darn thing. In essence, COBE
produced the first "baby picture" of the universe.

Because Helium and Lithium are so prevalent today it was obvious, to someone, that they were produced by an abundant amount of hydrogen. Cosmologists see the same process continuing today in stars and see that 25% of all matter in the Universe should end up being Helium. Though most stars keep their Helium. So the Helium that does make up 25% of the Universe does not come from the stars, so it must have come from someplace else, and the Big Bang is the only candidate.

There is also the implication that once the Universe cooled down a bit, about 400,000 years after the Big Bang, light stopped interacting with matter, the result of protons being able to capture electrons allowing neutral atoms to form allowing light to pass. What happened then? Voila! Background radiation that we perceive today with our satellite instruments, showing low energy photons being stretched with expansion. This radiation that is found is called cosmic microwave background radiation (CMBR).

The Uniform, Homogenous Universe

Also from information taken from http://nasasearch.nasa.gov/search?utf8=%E2%9C%93&affiliate=nasa&query=COBE
It has been discovered that 14 billion years after the Big Bang that the Universe is weirdly uniform. How could that be? It is as though the different parts of the Universe are talking to each other and agreeing as to density and temperature. This cannot be since that would mean that information was passing from one end of the Universe to the other end at a speed faster than the speed of light. The solution to this impossible situation of information travelling faster than the speed of light is to reduce the size of the Universe to the point where it is within a size where information can be transmitted no faster than the speed of light and then allow the expansion of the Universe to take place with all regions having had its marching orders forever after.

14 billion years later, there are no variations at all from one part of the Universe to the other. All parts of the Universe cooled down at the same mechanically coherent rate, and all parts of the Universe kept the same viscosity and density of matter as all other parts, and all parts of the Universe continue to increase its expansion at the same rate of increasing acceleration. It's simply amazing! How did this happen since no part of the Universe can receive a 'what we're wearing today' memo from the other end of the Universe because its 14 billion light years away? This type of thinking is how the Big Bank Theory came about. In other words, the Universe started out homogenous, and has stayed that way.
Perceiving Dark Matter

Einstein's field equations pertains to light bending when light passes galaxy clusters. The bending of light in such a circumstance is referred to as gravitational lensing. However, the bending of light passing galaxy clusters is more than what would be expected by the mass of the galaxy clusters themselves. Something more is causing the huge extent of the gravitational lensing seen around galaxy clusters. Using special lens a blue 'hue' or halo can be seen around galaxy clusters. We can't actually 'see' Dark Matter because it does not radiate light, or perceivable energy, or radiation or anything. What we see is light from other galaxy clusters being bent by something far more massive than the galaxy clusters around which the light is being bent. It's a bit like green grass, where we know that the grass is reflecting the wave of color that it is not, but instead of saying that grass is not the color green, we say that grass is green. Can we see Dark Matter? No. Can we perceive Dark Matter? Yes.

Supernovae and the Expansion of the Universe

Supernovae are exploding white dwarf stars, three of which are seen in the 2005 photo above. By observing supernovae explosions it has been determined that the Universe is
much larger than thought because the supernovae are further away than believed. This increased distance could only be reconciled, it was believed, by using Friedmann's model of the expanding Universe. Friedmann also had a decreasing model of a shrinking Universe, but that model didn't fit observational data. Observational data is what we can perceive with our senses or that we can perceive with the help of a device that interprets phenomena in order that we can perceive it. Dark Matter cannot be perceived directly, but we can perceive an effect that is a result of Dark Matter. That is, galaxy clusters where galaxies spin around one another but do not spin apart, or stars spinning around a galaxy but are held, or pushed, so that they do not spin away from a galaxy. Dark Energy cannot be perceived, but we can perceive an energy propelling or attracting galaxies that are moving away from each other at an ever increasing rate of acceleration. Now we ask, what would cause that effect that we call Dark Energy?

Two Elders of Philosophy, Bert and Izzy Meet in a Muskegon Pub

For a Discussion of Justian’s, “Dark Gravity: The Source of the Dark Forces”

Bert: I hear that you like tinkering with clock works.

Izzy: Tick, tock, tick, tock. Springs and gears just keep going.

Bert: But someone has to wind up the spring.

Izzy: Some things never stop. Ask Weinburg, ha, ha.
Bert: About this book, You be Justian and I’ll ask things.

Izzy: You're asking me to not be me.

Bert: You mean smart?

Izzy: Can I refer to the Law of Universal Gravitation?

Bert: No, that would be too easy, you're Justian, remember?

Izzy: Then who are you?

Bert: I'll be a skeptic of the book.

Izzy: Then begin.

Bert: I'm not clear about your main principle.

Izzy: You mean the Principle of my book?


Izzy: You weren't clear. My argument is that a gravitational attraction from hypermassive globular or bubble like objects surround the Universe with a non-uniform density of mass resulting in a galaxy's increasing rate of acceleration towards the nearest of those objects.

Bert: You're talking about Dark Energy. What about Dark Matter?

Izzy: Dark Matter is a cumulative effect of non-radioactive particles that do not move individually but have a cumulative density and gravitational attraction with other objects. Dark Matter and Dark Energy are essentially the same thing, meaning that they are an attractive force of gravity, or some might say, a positive energy.

Bert: If the galaxies were surrounded by a dense mass they wouldn't go anywhere. They would be like a golf ball in a hollowed out center of Earth. It would just float.
Izzy: That's assuming a uniform density is surrounding the golf ball. The Dark Matter that the gravitational lensing highlights, is not of uniform density throughout the Universe. Perhaps I should note that the huge, immense globule or bubble object attracting each of the galaxies is very dense, floating in a field that is not of uniform density. This means that the galaxies subjected to Dark Energy are attracted by dense globules or bubbles of mass that are made up of particles that are not moving and have no detectable mass but are so numerous that there is a cumulative effect of density of mass.

Bert: You're guessing. I mean you're guessing about the fact that the particles are not moving.

Izzy: So you agree that there can be a cumulative effect of virtually massless particles?

Bert: Sure. That's not unreasonable.

Izzy: And you can agree that a density of a mass can exist in globules or bubbles to the extent that there can be globules or bubbles of dense particle mass where the density is greater than the field of mass of surrounding particles?

Bert: Okay, like steel balls floating in water where the steel has a greater mass than the surrounding water. I can give you that point even if there are alternative arguments, assuming that the steel balls cannot sink. Ha, ha.

Izzy: Can you agree that gravitational lensing indicates that Dark Matter surrounds and envelopes a galaxy?

Bert: You say envelopes, but you could say permeates.

Izzy: Nevertheless, there appears to be a non-moving hue around a galaxy. Even though the particles within Dark Matter may be moving they are not like neutrons traveling around so that we can catch them in a bucket of water.

Bert: That is something to discuss, Perhaps the particles making up Dark Matter are here, now, as part of us, not enveloping us so much as permeating us.
Izzy: I say that the particles that make up Dark Matter are not moving, but that just makes sense to me based upon observational data. My theory may not depend upon non-moving particles but, in order to have structured globules or bubbles of dense mass of a sufficient size to attract galaxies to a non-uniform area of denseness, or even viscosity, I like the idea of particles that do not move individually.

Bert: But they can move as part of a globule or bubble?

Izzy: Yes, or as a part of a stream that becomes a bubble or part of a bubble.

Bert: If the acceleration of a galaxy is increasing wouldn't that be interpreted as a galaxy becoming closer to the attracting object?

Izzy: Yes. Eventually, according to my understanding of how nature works, the galaxies will collide or merge with the massive objects, or in the alternative, as the Universe thins out, the massive objects will merge into the Universe, stopping the acceleration and placing the Universe into a static phase.

Bert: The cosmological constant.

Izzy: Okay. The Universe will stop expanding and will be held in place. But though the spring causing the Universe to expand is wound down, the galaxies continue to spin.

Bert: If gravity is the thing causing acceleration, and acceleration is uniform in all directions, then your thing must have uniform density. It can't work WITH uniform density, and it can't work WITHOUT uniform density. WITH uniform density, galaxies drift to the center. WITHOUT uniform density, we'd observe all kinds of different acceleration rates.

Izzy: Not necessarily but, arguendo, it there are different acceleration rates we wouldn't know about it. Meaning, no one knows anything about the rate of acceleration or the speed the galaxies are going, only that they appear,
based upon a red shifting, to be increasing acceleration.

Bert: No, it's happening at the same rate in all directions.

Izzy: It is generally accepted that the Universe is flat and homogenous. Of course there are physicists who disagree. Assuming a flat homogenous Universe, a look at the COBE illustrations in my book shows that there is a difference in density here and there. There is an 'average' look, as a freckled face of a kid has an average freckled look, but the face is not freckle brown, nor freckleless white. There's an average facial color. However, the rate of acceleration of a galaxy has not been measured with a precise speed. A surrounding object, assuming it is not simply surrounding the outer limits of the Universal disk, rather than both under and over the disk, may also have different densities within the object. That's why a globule or bubble is required.

So your objection is: If a bunch of golf balls were located in the middle of an empty core located in the center of Earth why would they accelerate towards the wall closest to each golf ball of the core at a uniform but increasing speed.

Bert: They wouldn't. They'd have enough stuff pulling on them from ALL directions that they'd oscillate near the center. Like the guy said, it's a college physics problem.

Izzy: Well then, that leaves my theory that the Universe is a spinning disk on the back of a turtle and that the centrifugal force is flinging the galaxies outward. Ha, ha, ha...

Bert: So, maybe, but then wouldn't the universe have some sort of spiral structure with spiral arms and stuff, like a spinning galaxy?

Izzy: A la, the fractalization of nature. Sure, I would think so, but we can't "see" that far out yet, so the spirals aren't yet perceived. Now to life, let's have another.
A FINAL WORD

If, after reading this book you don't know what Dark Matter and Dark Energy are, you don't agree with my theory and, like NASA, you still don't know what those forces are. If you accept what I have said in this book you know what Dark Matter and Dark Energy are. They are manifestations of Dark Gravity, the same gravity that is subject to Newton's Laws of Motion and Gravity. Mechanically, they are created by non-moving virtually massless particles that group together into globules or bubbles large enough to encase our galaxy. The cumulative effect of the said particles have a gravitational attraction from inside the galaxy of sufficient authority to hold a galaxy together and, for those globules outside the Universe the mass is sufficient to attract galaxies at an ever increasing rate of acceleration. As a result of the attraction of galaxies the Universe is thinning and that allows for an ever increasing and greater permeation of Dark Matter into the Universe that will eventually allow the bubbles of mass to merge with the Universe resulting in the end of the acceleration of galaxies and the creation of a static Universe. However, you can simply say that Dark Matter and Dark Energy are Newton's Laws at work and explain what you mean to anyone taking the time to listen. One thing is certain, to date, no one has seen Dark Matter or Dark Energy yet we all believe they must exist. “Blessed are those who have not seen and yet believe.” John 20:29

Everyone wonders about the make-up of the Dark forces, the clue to the make-
up is to be found in the proximate cause of the Dark forces...

“This is a force is perceived and named look for the proximate cause in order to seek protection from or to attempt to control and make use of the force.”

"Yes, because we now know the source of the dark forces we will, in the near future, control and make use of the Dark Forces in manners beyond our present ken..."

David R. Justian, J.D.
Muskegon, Michigan
In the year of our Lord, MMXVIII
Newton’s
DARK GRAVITY
THE SOURCE OF THE
DARK FORCES OF
DARK MATTER & DARK ENERGY

This book is the explanation of the source of Dark Matter and Dark Energy, and what they are and how they work. This book is the first step toward taking vital action to use these Dark Forces for the benefit of humans.

David R. Justian, J.D., Writer

My friend, take this secret that no one else knows, and run with it... and after you gain more knowledge, share with me and my other friends, that is, the World.

DarkGravityBook.com