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## GRAVITY EXPLAINED

### According to the John Ross Model of the Cosmos

#### ABSTRACT

My "John Ross Model of the Cosmos", is a proposed replacement for the **Standard Model, Einstein Relativity and Quantum Mechanics**. My model explains gravity and describes for the first time the internal structure of electrons, positrons, protons, anti-protons, alpha particles and all of the nuclei of stable atoms. My model describes the Monster Black Holes (MBH) at the center of each Universe in the Cosmos and the Galactic Black Hole (GBH) at the center of each galaxy in each Universe. My model requires new definitions of the "**Cosmos**", "**Universe**", "**our Universe**", "**Galactic Black Hole**" (GBH) and "**Monster Black Hole**" (MBH). My model defines the "**Cosmos**" as everything that currently exists, has existed in the past since the beginning of time and will exist in the future, forever.

My **Ross Model of the Cosmos** identifies for the first time the **single fundamental particle** in the **Cosmos**, the "**tronnie**". **Tronnies** are point particles with a charge of plus e or minus e. (+/- about  $1.602 \times 10^{-19}$  coulomb). **I discovered tronnies in 2004**. **Tronnies** are the source of the **Coulomb force**. **Tronnies** always travel in perfect circles with a speed of  $\pi c/2$  in twosomes or threesomes with one or two other **tronnies**; so that, each **tronnie** is always at a **point focus** of its own and its partner's or partners' Coulomb forces. So: **tronnies** are point particles with charges of **plus e or minus e**. Everything in the **Cosmos** is made from **tronnies** or from things made from **tronnies**. I discovered in the **entron** in 2006. The **entron** is comprised of one plus **tronnie** and one minus **tronnie** and has a charge of zero. **Entrons** provide all of the mass of the **Cosmos** except for the mass of the electrons and positrons. There is one **entron** in each photon in the **Cosmos**. In the photon the **entron** travels in a circle at a speed of  $2c$  while the photon travels forward at a speed of  $c$ . A very special photon is the **neutrino photon** and its **entron** is the **neutrino entron**. I call these particles the **God Particles** because of their importance.

**Neutrino photons** have energy of about 928 MeV and are released by **Black Holes** to provide the gravity holding universes and galaxies together and filling their universes and galaxies with **neutrino entrans** which are ultimately utilized by the universes and galaxies (along with lower energy entrans) to create electrons and positrons, protons, anti-protons, alpha particles and **all the atoms in the Table of the Isotopes**. The atoms are recycled in **Black Holes** to assure an approximately **steady-state Cosmos**. **Black Holes** are extremely hot stars that radiate 928 MeV neutrino photons. **Neutrino photons** are not visible to our eyes or detected by any existing detector. **Each neutrino photon and its entron have a mass of about  $1.65 \times 10^{-27}$  kg**. Neutrino photons that illuminate **stars, planets and large moons** and are absorbed in the **stars, planets and moons** and are later released through the surfaces of the stars, planets and moons to provide the gravity of the **stars, planets and moons**.

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## JOHN ROSS MODEL OF THE COSMOS (SUMMARY)

### THE COSMOS, UNIVERSES, GALAXIES, GRAVITY AND BLACK HOLES

Gravity cannot be logically explained in accordance with **The Standard Model, Quantum Mechanics** and **Einstein Relativity** or any other generally recognized physics model. Gravity can easily be explained based on my **“John Ross Model of the Cosmos”**. According to my model, all gravity originates in **Galactic Black Holes (GBHs)** that exist at the center of each galaxy and **Monster Black Holes (MBHs)** at the center of each universe. I define the “Cosmos” as everything that currently exists, has existed in the past and will exist in the future, forever. I define “universe” as the collection of galaxies that are under the gravitational control of a MBH in the center of the universe. There are many universes in the Cosmos, but only one Cosmos.

#### THE TRONNIE

My model identifies a most important particle currently unknown to science. It is the single fundamental particle in the Cosmos. It is the **“tronnie”**, first recognized by me about 20 years ago. Tronnies are point particles with a charge of plus “e” or minus “e”. In order to exist tronnies must always travel in perfect circles at a speed of  $\pi c/2$  with one or two other tronnies. **(Circling at this speed results in each tronnie always being at a perfect focus of the Coulomb forces of its own and one or two other tronnies.)** Every electron in the Cosmo is comprised of two minus tronnies and one plus tronnie. Positrons are comprised of two plus tronnies and one minus tronnie. To my knowledge, I am also the first person to recognized the internal structure of the electron and the positron and the existence of another **very important particle** that I have named the **“entron”**. The entron is comprised of one plus tronnie and one minus tronnie circling with **diameters ranging over 18 orders of magnitude** from about  **$0.9339 \times 10^{-18}$  meter** to more than **one meter**. Entrons are the **energy/mass** of every photon in the Cosmos. In electrons and positrons, the diameter of the tronnies’ circles is about  $0.9339 \times 10^{-18}$  m, the same diameter as that of the smallest, most energetic entron. Entrons in photons always travel within the photon at a speed of  $2c$  (**twice the speed of light**) in perfect circles while the photon travels forward at a speed of  $c$ . **So, in photons entrons travel within the photons at forward speeds ranging from  $+3c$  to  $-c$  relative to the photon’s forward direction.**

#### GRAVITY

**Gravity** is provided by a very special photon, the **neutrino photon**, and its entron, the **neutrino entron**. I call these particles: **“God Particles”**, because of their importance. Each neutrino photon (together with its neutrino entron) has an energy of about  $1.487 \times 10^{-10}$  joule (about 928 MeV) corresponding to a temperature of 2.16 trillion Kelvin and a mass (corresponding to its energy) of about  $1.65 \times 10^{-27}$  kg and a wavelength of about  $1.335 \times 10^{-15}$  m. The neutrino photon and its neutrino entron are the most energetic entron and photon in the Cosmos and they provide the gravity of the Cosmos. The neutrino entron provides more than 99.9 percent of the mass of each proton and each anti-proton in the Cosmos. Every ground-state proton is comprised two positrons (with very small masses) and a very high-energy, high-mass electron that has captured a neutrino entron with its mass of about  $1.65 \times 10^{-27}$  kg. This gives the ground-state proton a charge of plus one e and mass of a little more than  $1.65 \times 10^{-27}$  kg.

#### MONSTER BLACK HOLES AND GALACTIC BLACK HOLES

Black Holes are very, very hot stars. Black Holes radiate energy only in the form of only neutrino photons to give the Black Holes a temperature of about 2.16 trillion Kelvin. Black Holes consume matter, break down molecules and atoms to release protons. They combine protons with anti-protons to annihilate both of them to release two neutrino entrons with each annihilation. **One of the two neutrino entrons is utilized by the Black Hole to produce another anti-proton and the other neutrino entron is released through the surface of the Black Hole to provide the gravity of the Black Hole.** I estimate that our Milky Way Black Hole, on the average, consumes matter at the rate of about one earth-size planet per earth-day and that our Universe’s Monster Black Hole (MBH) consumes matter at the rate of about one sun-size star per earth-day. For example, one earth-size planet consumed by our Milky Way Black Hole would produce a flux of neutrino photons at our Solar System (26 thousand lightyears away) of **54,800 neutrino photons per square meter per second**. And the consumption of a sun-size star by the MBH at the center of our Universe would provide a neutrino photon flux at the current position of our MWG (650 million lightyears away) of **23 neutrino photons per square meter per second**. **So, everyone living in the Milky Way Galaxy (including you, the reader, and me are being penetrated by neutrino photons from our two Black Holes at a rate of about 54,823**

**neutrino photons every second!** Neutrino photons penetrate completely through our bodies, but they penetrate only a few millions of meters through stars, planets and moons before being temporally absorbed or scattered by an electron or a positron. (I estimate the **mean-free path** of a neutrino photon in a star, planet or large moon at about **7 million meters**.) While the neutrino entron is traveling at a speed of **-c or close to -c**, the neutrino entron produces **a reverse force** on the star, planet or moon directed back toward the source of the neutrino photons (i.e., the two Black Holes). Neutrino entrons accumulate in stars, planets and moons and are later released through the surfaces of the stars, planets and moons as neutrino photons to provide the gravity of the stars, planets and moons. So, people living on the surface of our earth are also being penetrated by **second-hand neutrino photons** from our sun and our moon but the gravity we feel comes mostly from our earth as you, the readers, can feel, but I will I will explain why, below.

### **DARK ENERGY AND DARK MATTER**

Neutrino photons and their entrons are not seen or detected by our eyes or any existing instruments. Their mass released from Black Holes is approximately equivalent to the mass of the matter consumed by the Black Holes. **They are the “dark energy” and “dark matter” of the Cosmos.** Not only do neutrino entrons and neutrino photons provide the gravity that holds universes together, they provide the mass and energy needed to create an approximately steady-state Cosmos. Neutrino entrons of the neutrino photons are captured by electrons in matter and in space to produce high-energy electrons that capture two positrons to produce self-propelled high-speed, ground-state protons in matter and in interstellar space and inter galactic space. The high-speed ground-state protons capture gamma ray entrons to produce slow-speed, high-energy protons that can capture an electron to produce high-energy hydrogen atoms and alpha particles that are utilized by stars in fusion processes to produce: (1) heat, light and other forms of energy and (2) alpha particles and all of the nuclei of all the atoms in the **Table of the Isotopes**.

### **GALACTIC LINEAR PASS-THROUGH ORBITS**

Almost all **galaxies** of our Universe orbit the MBH in the center of our Universe in gravity powered **“linear pass-through orbits”**. Our Milky Way Galaxy (MWG), which is currently located about 650 million lightyears from Monster Black Hole (MBH) at the center of our Universe and is receding from the MBH at about 13.4 million meters per second), but will be slowed down gradually by the gravity of our MBH over billions of years to zero speed near the edge of our Universe. (I have estimated that the edge of our Universe is about 50 billion lightyears from its center.) From zero speed near the edge of our Universe, a typical galaxy (such as our MWG, will free-fall approximately directly toward the MBH for many billion earth-years, increasing in speed every second of the trip. A typical galaxy has a diameter that is about a trillion times larger than the diameter of the MBH at the center of its universe, so almost all of the galaxy passes through the region of the MBH without being consumed. And the momentum of the galaxy is enough to propel the galaxy to a distance of many billion lightyears away from the MBH to the opposite edge of its universe. During this trip to the opposite edge of its universe, the gravity of the MBH will be continually slowing down the receding galaxy; so that the galaxy arrives at the opposite edge of our Universe with a speed of zero. From this point the typical galaxy (for example our MWG) will then begin another many billion (such as 50 billion) lightyear free-fall toward the MBH and will pass through the region of the MBH at about the same speed as its previous passage. As before, the momentum of the galaxy is sufficient to return the MWG galaxy to its starting position for this many-billion (such as 200 billion) lightyear galactic cycle. But the gravity of the MBH would have slowed the galaxy down to a speed of zero, so that, it is ready for the next many billion (such as 200-billion) lightyear cycle. During the two passages per cycle through the region of the MBH per cycle, I estimate that at least a few star systems will be consumed by the MBH and Black Holes of galaxies with elliptical orbits around the MBH, but the very large majority of the star systems of the linear pass-through galaxy will pass through the region of the MBH and head toward the opposite side of the Universe.

### **NOBEL PRIZE IN PHYSICS**

My **John Ross Model** is described in my book, **Tronnies – The Source of the Coulomb Force**, first printed and copyrighted in 2014, and it has been available at **amazon.com** since 2016. A 2.5-hour YouTube video lecture by me describing my theory is available at “youtube.com”. The lecture is entitled: **“The Ross Model of the Cosmos”**. It can be viewed and downloaded by searching in GOOGLE for **“The Ross Model of the Universe”**. In this paper my Ross Model particles and my Ross Model concepts, are bolded and underlined when they are first mentioned in my text.) **In this paper (pn Page 92), I list 17 of my most important discoveries, each of which I believe, should justify for me a Nobel Prize in Physics.**

## THE JOHN ROSS MODEL OF THE COSMOS

### TRONNIES

Tronnies are point particles with a charge of plus e (the same charge as the charge of the proton or the positron) or minus e (the same charge as the charge of the anti-proton and the electron). The electron is comprised of two minus tronnies and one plus tronnie and the positron is comprised of two plus tronnies and one minus tronnie. I discovered the tronnies in 2001 and I gave them their names, “plus tronnie” and “minus tronnie”. Four years later I also discovered a particle that I have named the “entron” which is comprised of one plus tronnie and one minus tronnie and has a net zero charge. Every photon in the cosmos is comprised of one entron which is self-propelled in a perfect circle at a speed of  $2c$  (twice the speed of light) and the photon is self-propelled forward at the speed of light,  $c$  (about 300 million meters per second in a vacuum). The diameter of the photon circle (corresponding to the path of its entron during one cycle of the photon) is equal to exactly  $2\lambda/\pi$  (about  $0.6366 \lambda$ ), where  $\lambda$  is the wavelength of the photon corresponding to the forward distance travelled by the entron during each cycle of the entron.

#### Everything in the Cosmos is Made from Tronnies.

Nothing exists in the Cosmos that is not 100% made of tronnies. Tronnies have no mass and no energy. Each tronnie does have its charge of plus e or minus e, i.e., about  $1.602 \times 10^{-19}$  coulomb. According to my model, tronnies have no size at all, and the smallest combination of tronnies, the neutrino entron, has a diameter less than a billionth of a billionth of a meter. Their charges provide the tronnies with the Coulomb force. Like charges repel and unlike charges attract with the Coulomb force that travels at the speed of light. **Each tronnie is exactly like itself; so, each tronnie repels itself with its own Coulomb force!** The number of plus tronnies in our Universe and in the Cosmos is exactly equal to the number of minus tronnies in our Universe and in the Cosmos. **I define “our Universe” as the universe we live in that is gravitationally controlled by a Monster Black Hole at the center of our Universe. I define the Cosmos as everything that exists, has existed in the past since the beginning of time and will exist in the future, forever.**

**Tronnies always travel in perfect circles in electrons, positrons and entrons, with one or two other tronnies; all traveling on the circumference of the circle, at a speed of exactly  $\pi c/2$  (about 1.5708 times the speed of light!** Coulomb forces from the tronnies travel diametrically across the tronnie’s circle at exactly the speed of light (about 300 million meters per second in a vacuum). As a consequence, each tronnie is always located at a **point focus of its own Coulomb forces and a point focus of the Coulomb forces of the one or two other tronnies.** This gives each tronnie its charge of e. **Therefore, each tronnie is a “point particle” with a charge of plus e or minus e.** (If this sounds like a “bootstrap” analysis, that is what it is.) Particles comprised of a different number of plus and minus tronnies (for example, the electron, the positron, the proton, alpha particle and the nuclei of atoms) have a net negative charge or a net positive charge. Particles comprised of the same number of plus and minus tronnies have a net zero charge (for example, the photon, the neutron and neutral atoms).

**My discovery of the tronnie is a first reason why I should be awarded the Nobel Prize in physics.**

## ENTRONS

**Entrons represent all the energy of the Cosmos except for kinetic energy and all the mass of the Cosmos except for the mass of electrons and positrons.** Each **entron** is comprised of one plus tronnie and one minus tronnie with the two tronnies traveling in perfect circles at a speed of  $\pi c/2$  (pi times the speed of light divided by 2) with diameters ranging from the smallest entron with a precise diameter ( $d'$ ) ranging, from about  $0.9339 \times 10^{-18}$  meter (exactly equal to the diameters of each of the tronnies in the electron and the positron) to more than one meter, to provide a spectrum of energy and mass covering about 18 orders of magnitude. Entrons provide the energy and mass of every photon. **There is exactly one entron in every photon in the Cosmos,** providing the photon with energy and mass. The smallest entron in the Cosmos is a very important entron with an energy of about 928 MeV (**a little bit less than one billion electron volts**) and a mass of about  **$1.65 \times 10^{-27}$  kilogram**. The largest entrons are radio wave entrons with diameters in the range about 0.1 meter to more than 1.0 meter, and energies in the range of less than a billionth of an electron volt and an extremely small mass of about  $10^{-41}$  to  $10^{-42}$  kilogram. The green-light entron (which provides the mass and energy of the green light photon) is approximately in the middle of the entron spectrum and has a diameter of about  $3.77 \times 10^{-10}$  meter (about the size of a typical atom). The attractive and repulsive **integrated forces** in all entrons, in the diametrical direction are exactly equal. Later on I will explain that each **“ground state proton”** in the Cosmos is a combination of two positrons with a combined mass of about  $27.3 \times 10^{-31}$  kg and a single electron that is combined with a single very energetic entron (the **“neutrino entron”**) with a mass of about  **$1.65 \times 10^{-27}$  kg**. Most **“protons”** also comprise several lower-energy, lower-mass gamma-ray entrons to add a total mass of about  $0.023 \times 10^{-27}$  kg to give the proton a mass of about  **$1.673 \times 10^{-27}$  kg**. All entrons are exactly alike all other entrons except they range in size, mass and energy over 18 orders of magnitude. The entron's size (e.g., diameter) is inversely proportional to its energy and mass.

Each entron is comprised of two opposite tronnies. FIG. 1 is a sketch from my book of a single tronnie traveling in a perfect circle within an entron at a speed of  $\pi c/2$  with its Coulomb force waves traveling at a speed of  $c$ . The entron's one other tronnie is not shown in FIG. 1. However, FIG. 1A shows the two tronnies and their Coulomb waves traveling within the entron. FIG. 2A shows the direction and magnitude of the attractive and repulsive forces in the entron. The attractive forces in the entron are about 1.681 greater than the repulsive forces, but the repulsive forces in the entron are in the diametrical direction, and attractive forces are at an angle of 53.515 degrees measured from the diameter. **As a result, the attractive and repulsive Coulomb forces in the entron integrated around the entron's circle, in the diametrical directions, are exactly equal to as many decimal places as there are in the number  $\pi$  (i.e., an infinite number of decimal places).** (You can check my math in **Chapter VI** of my book.) So entrons can be stable for many billions of years or even forever.

**The smallest entron (with a diameter of about  $0.9339 \times 10^{-18}$  m) is the most important particle in the Cosmos.** and I have named it the **“neutrino entron”** and I call it and its photon, **“God Particles”** because of their importance. I will have a lot more to say about the **God Particles**, especially when we get to describing gravity in detail.

## PHOTONS

**Photons are not wave functions as proposed by Quantum Mechanics and they are not elemental particles as proposed by the Standard Model. Every photon in the Cosmos is an entron self-propelled in perfect circles at twice the speed of light ( $2c$ ) and forward at the speed of light,  $c$ . The diameter  $d$  of the photon circle of every photon in the Cosmos is about 911 times the diameter  $d'$  of its entron circle.**

**So, the photon, like the entron, also range in size over 18 orders of magnitude, from the smallest photon with a smallest diameter d of about  $0.8485 \times 10^{-15}$  meter to more than a kilometer ( $10^3$  m).**

Each of the two tronnies in entron are required to travel at speeds **no slower than the speed of light**, but the two tronnies are attracted to each other at the speed of light, and the photon (along with its entron) can travel no slower than the speed of light in order to stay ahead of its own coulomb forces which are expanding at the speed of light. So, for the entron to stay ahead of the Coulomb forces of **both tronnies**, the entron must travel at a speed **no lower than 2c (twice the speed of Light)**. But the photon cannot travel faster than the speed of light without out-running the Coulomb forces of the two tronnies in the entron. To meet both of the requirements, the **entrons travel in a perfect circle at twice the speed of light and forward at the speed of light**.

**Table A**

**Typical Photons**

Photon	Photon-Entron Energy (eV)	Photon Wavelength (m)	Entron Diameter (m)	Black Body Peak Temperature (K)	Mass (kg)
Radio Wave Photons	$1 \times 10^{-8}$	124	$8.67 \times 10^{-2}$	$2.34 \times 10^{-4}$	$1.78 \times 10^{-44}$
H 21 cm Line	$5.875 \times 10^{-6}$	$2.11 \times 10^{-1}$	$1.47 \times 10^{-4}$	$1.37 \times 10^{-2}$	$1.04 \times 10^{-41}$
Microwave Photons	$1.02 \times 10^{-5}$	$1.21 \times 10^{-1}$	$8.5 \times 10^{-5}$	$2.4 \times 10^{-2}$	$1.82 \times 10^{-41}$
CBR (Peak)	$2.35 \times 10^{-4}$	$5.27 \times 10^{-3}$	$3.69 \times 10^{-6}$	$5.49 \times 10^{-1}$	$4.19 \times 10^{-40}$
Millimeter Wave Photons	$3.07 \times 10^{-4}$	$4.04 \times 10^{-3}$	$2.8 \times 10^{-6}$	$7.17 \times 10^{-1}$	$5.47 \times 10^{-40}$
Near Infrared Photon	0.124	$1.0 \times 10^{-5}$	$6.94 \times 10^{-9}$	290	$2.21 \times 10^{-37}$
Std. Amb. Temp. 25C	0.125	$9.92 \times 10^{-6}$	$6.93 \times 10^{-9}$	293	$2.23 \times 10^{-37}$
Human Body Temperature	0.133	$9.32 \times 10^{-6}$	$6.51 \times 10^{-9}$	310	$2.37 \times 10^{-37}$
Visible Light Photons – Red	1.88	$6.60 \times 10^{-7}$	$4.61 \times 10^{-10}$	4,391	$3.35 \times 10^{-36}$
Visible Light Photons - Green	2.29	$5.41 \times 10^{-7}$	$3.77 \times 10^{-10}$	5,350	$4.08 \times 10^{-36}$
Sun Surface Temperature	2.48	$5.00 \times 10^{-7}$	$3.50 \times 10^{-10}$	5,800	$4.42 \times 10^{-36}$
Visible Light Photons – Blue	2.7	$4.59 \times 10^{-7}$	$3.21 \times 10^{-10}$	6,300	$4.80 \times 10^{-36}$
5 eV Ultraviolet Photon	5.00	$2.48 \times 10^{-7}$	$1.7 \times 10^{-10}$	$1.16 \times 10^4$	$8.91 \times 10^{-36}$
10.2043 eV Photon	10.2043	$1.21 \times 10^{-7}$	$8.49 \times 10^{-11}$	$2.38 \times 10^4$	$1.82 \times 10^{-35}$
13.6057 eV Photons	13.6057	$9.11 \times 10^{-8}$	$6.38 \times 10^{-11}$	$3.17 \times 10^4$	$2.43 \times 10^{-35}$
Extreme Ultraviolet	$1.122 \times 10^3$	$1.104 \times 10^{-9}$	$7.722 \times 10^{-13}$	$2.61 \times 10^6$	$2.00 \times 10^{-33}$
X-Ray Photons	$12.4 \times 10^3$	$1.00 \times 10^{-10}$	$6.99 \times 10^{-14}$	$2.90 \times 10^7$	$2.21 \times 10^{-32}$
Annihilation Photon	$5.11 \times 10^5$	$2.42 \times 10^{-12}$	$1.696 \times 10^{-15}$	$1.12 \times 10^9$	$9.11 \times 10^{-31}$
Gamma Ray Photon	$7.47 \times 10^5$	$1.66 \times 10^{-12}$	$1.16 \times 10^{-15}$	$1.73 \times 10^9$	$1.33 \times 10^{-30}$
Pair Production Gamma Ray	$1.0214 \times 10^6$	$1.213 \times 10^{-12}$	$8.485 \times 10^{-16}$	$2.38 \times 10^9$	$1.82 \times 10^{-30}$
Gamma Ray Photon	$8.37 \times 10^6$	$1.48 \times 10^{-13}$	$1.03 \times 10^{-16}$	$1.95 \times 10^{10}$	$1.49 \times 10^{-29}$
Neutrino Photon	$928 \times 10^6$	$1.335 \times 10^{-15}$	$0.9339 \times 10^{-18}$	$2.16 \times 10^{12}$	$1.654 \times 10^{-27}$

**Table A** is a list of 22 entrons and photons providing features of examples of the full range of the electromagnetic spectrum. Almost all educated people are aware that photons have a frequency and a wavelength. **Almost nobody is aware that the frequency and wavelength of every photon in the Cosmos is a consequence of its entron traveling in a circle at a speed equal to twice the speed of light and forward at the speed of light.** (The internal structure of photons has been described in detail in my book, **Tronnies- The Source of the Coulomb Force**, which has been available at Amazon.com since 2014, but

very few people have read it. My 2.5-hour lecture (**Ross Model of the Cosmos**) has been available on YouTube and it describes the photon, but it has so far it has not been a big hit on the Internet.) I am afraid that I may be long dead by the time my discovery of the internal structure of the photon is recognized by the scientific community. All photons and all entrons are exactly alike except they range in size, energy, wavelength **and mass** over 18 orders of magnitude as described below in Table A and Table A (Continued). **Most people don't believe photons have a mass. They do have a mass.** Every photon in the Cosmos has a mass. Examples from the entire spectrum are listed in Table A. Science realizes that photons have angular momentum; but Science does not have a good explanation for how photons can have momentum without mass. The answer is: **photons do have a mass.**

**Table A (Continued)**

**Typical Photons**

Photon	Photon-Entron Energy (eV)	Photon Wavelength (m)	Entron Diameter (m)	Photon Frequency (Cy/s)	Photon Diameter (m)	Mass X Radius (m-kg)
Radio Wave Photons	1 X 10 <sup>-8</sup>	124	8.67 X 10 <sup>-2</sup>	2.42 X 10 <sup>3</sup>	78.9	7.02 X 10 <sup>-43</sup>
H 21 cm Line	5.875 X 10 <sup>-6</sup>	2.11 X 10 <sup>-1</sup>	1.47 X 10 <sup>-4</sup>	1.42 X 10 <sup>9</sup>	1.34 X 10 <sup>-1</sup>	6.97 X 10 <sup>-43</sup>
Microwave Photons	1.02 X 10 <sup>-5</sup>	1.21 X 10 <sup>-1</sup>	8.5 X 10 <sup>-5</sup>	2.48 X 10 <sup>9</sup>	7.70 X 10 <sup>-2</sup>	7.01 X 10 <sup>-43</sup>
CBR (Peak)	2.35 X 10 <sup>-4</sup>	5.27 X 10 <sup>-3</sup>	3.69 X 10 <sup>-6</sup>	5.68 X 10 <sup>10</sup>	3.35 X 10 <sup>-3</sup>	7.02 X 10 <sup>-43</sup>
Millimeter Wave Photons	3.07 X 10 <sup>-4</sup>	4.04 X 10 <sup>-3</sup>	2.8 X 10 <sup>-6</sup>	7.43 X 10 <sup>12</sup>	2.57 X 10 <sup>-3</sup>	7.03 X 10 <sup>-43</sup>
Near Infrared Photon	0.124	1.0 X 10 <sup>-5</sup>	6.94 X 10 <sup>-9</sup>	3.00 X 10 <sup>13</sup>	6.37 X 10 <sup>-6</sup>	7.04 X 10 <sup>-43</sup>
Std. Amb. Temp. 25C	0.125	9.92 X 10 <sup>-6</sup>	6.93 X 10 <sup>-9</sup>	3.02 X 10 <sup>13</sup>	6.31 X 10 <sup>-6</sup>	7.03 X 10 <sup>-43</sup>
Human Body Temperature	0.133	9.32 X 10 <sup>-6</sup>	6.51 X 10 <sup>-9</sup>	3.22 X 10 <sup>13</sup>	5.93 X 10 <sup>-6</sup>	7.03 X 10 <sup>-43</sup>
Visible Light Photons – Red	1.88	6.60 X 10 <sup>-7</sup>	4.61 X 10 <sup>-10</sup>	4.55 X 10 <sup>14</sup>	4.20 X 10 <sup>-7</sup>	7.04 X 10 <sup>-43</sup>
Visible Light Photons - Green	2.29	5.41 X 10 <sup>-7</sup>	3.77 X 10 <sup>-10</sup>	5.54 X 10 <sup>14</sup>	3.43 X 10 <sup>-7</sup>	7.00 X 10 <sup>-43</sup>
Sun Surface Temperature	2.48	5.00 X 10 <sup>-7</sup>	3.50 X 10 <sup>-10</sup>	6.00 X 10 <sup>14</sup>	3.18 X 10 <sup>-7</sup>	7.02 X 10 <sup>-43</sup>
Visible Light Photons – Blue	2.7	4.59 X 10 <sup>-7</sup>	3.21 X 10 <sup>-10</sup>	6.45 X 10 <sup>14</sup>	2.92 X 10 <sup>-7</sup>	7.01 X 10 <sup>-43</sup>
5 eV Ultraviolet Photon	5.00	2.48 X 10 <sup>-7</sup>	1.7 X 10 <sup>-10</sup>	1.21 X 10 <sup>15</sup>	1.58 X 10 <sup>-7</sup>	7.03 X 10 <sup>-43</sup>
10.2043 eV Photon	10.2043	1.21 X 10 <sup>-7</sup>	8.49 X 10 <sup>-11</sup>	2.47 X 10 <sup>15</sup>	7.70 X 10 <sup>-8</sup>	7.00 X 10 <sup>-43</sup>
13.6057 eV Photons	13.6057	9.11 X 10 <sup>-8</sup>	6.38 X 10 <sup>-11</sup>	3.28 X 10 <sup>15</sup>	5.80 X 10 <sup>-8</sup>	7.05 X 10 <sup>-43</sup>
Extreme Ultraviolet	1.122 X 10 <sup>3</sup>	1.104 X 10 <sup>-9</sup>	7.722 X 10 <sup>-13</sup>	2.72 X 10 <sup>16</sup>	7.03 X 10 <sup>-1</sup>	7.03 X 10 <sup>-43</sup>
X-Ray Photons	12.4 X 10 <sup>3</sup>	1.00 X 10 <sup>-10</sup>	6.99 X 10 <sup>-14</sup>	3.00 X 10 <sup>18</sup>	6.37 X 10 <sup>-11</sup>	7.04 X 10 <sup>-43</sup>
Annihilation Photon	5.11 X 10 <sup>5</sup>	2.42 X 10 <sup>-12</sup>	1.70 X 10 <sup>-15</sup>	1.24 X 10 <sup>20</sup>	1.54 X 10 <sup>-12</sup>	7.01 X 10 <sup>-43</sup>
Gamma Ray Photon	7.47 X 10 <sup>5</sup>	1.66 X 10 <sup>-12</sup>	1.16 X 10 <sup>-15</sup>	1.21 X 10 <sup>20</sup>	1.06 X 10 <sup>-12</sup>	7.05 X 10 <sup>-43</sup>
Pair Production Gamma Ray	1.0214 X 10 <sup>6</sup>	1.213 X 10 <sup>-12</sup>	8.485 X 10 <sup>-16</sup>	2.47 X 10 <sup>20</sup>	7.72 X 10 <sup>-13</sup>	7.02 X 10 <sup>-43</sup>
Gamma Ray Photon	8.37 X 10 <sup>6</sup>	1.48 X 10 <sup>-13</sup>	1.03 X 10 <sup>-16</sup>	2.03 X 10 <sup>21</sup>	7.28 X 10 <sup>-14</sup>	7.02 X 10 <sup>-43</sup>
Neutrino Photon	928 X 10 <sup>6</sup>	1.335 X 10 <sup>-15</sup>	0.9339 X 10 <sup>-18</sup>	2.247 X 10 <sup>23</sup>	8.49 X 10 <sup>-16</sup>	7.03 X 10 <sup>-43</sup>

There seems to be about as much confusion in the scientific literature about the angular momentum of photons as there is about the mass of photons. There seems to be general agreement that the wavelength of a green light photon is about 5.25 X 10<sup>-7</sup> m. And that the energy of a green light photon is E = hc/λ where h = Planks constant about 6.626 X 10<sup>-34</sup> Js and the speed of light is c = 3.00 X 10<sup>8</sup> m/s so:

$$E = (6.626 \times 10^{-34} \text{ Js}) \times (3.00 \times 10^8 \text{ m/s}) / (5.42\text{m}) = 3.67 \times 10^{-19} \text{ J} = 3.672 \times 10^{19} \text{ kg m}^2/\text{s}^2 = 2.29 \text{ eV.}$$

Using Einstein's famous equation E = mc<sup>2</sup>, we see,



$$m = E / c^2, \text{ so:}$$

$$m = (3.67 \times 10^{-19} \text{ kgm}^2/\text{s}^2) / (9 \times 10^{-16} \text{ m}^2/\text{s}^2) = 4.08 \times 10^{-36} \text{ kg.}$$

So, my typical green light photon has an energy of 2.29 eV ( $36.72 \times 10^{-20}$  J) and a corresponding mass of mass of about  $4.08 \times 10^{-36}$  kg corresponding to the energy of the photon. This is the mass of the green light photon that I reported in my 2014 book and it is repeated here in Table A above. The equation I learned for angular momentum of a spinning mass is  $mvr$ ; where  $m$  is mass,  $v$  is velocity, and  $r$  is the radius of the thing spinning. In this case the thing spinning is the entron which (according to my model of the Cosmos) is spinning at twice the speed of light within the green light photon. In my green light photon (see Table A),  $m$  is  $4.08 \times 10^{-36}$  kg, its diameter is  $3.43 \times 10^{-7}$  m, so the radius is  $1.715 \times 10^{-7}$  m and the velocity of all entrons in photons is  $2c$  or  $6 \times 10^8$  m/s; so, the angular momentum is:

$$\begin{aligned} \text{Angular Momentum} &= (4.08 \times 10^{-36} \text{ kg}) \times (2 \times 3 \times 10^8 \text{ m/s}^2) \times (3.43 \times 10^{-7} \text{ m}/2) = 4.198 \times 10^{-34} \text{ kgm}^2/\text{s} \\ &= 4.198 \times 10^{-34} \text{ Js.} \end{aligned}$$

The reader may notice that for all photons listed in Table A, the product of mass and radius is a constant value of about  $7.022 \times 10^{-43}$  kg-m. (The values range from  $6.97 \times 10^{-43}$  to about  $7.05 \times 10^{-43}$  kg-m.) When we multiply that constant value of mass and radius by twice the speed of light (about  $6 \times 10^8$  m/s, we get the angular momentum of every photon in the Cosmos of about  $4.22 \times 10^{-34}$  Js. This result is similar to the recognized values for  $h$  and  $\hbar$  which are  $h =$  about  $6.626 \times 10^{-34}$  Js and  $\hbar =$  about  $1.055 \times 10^{-34}$  Js. I am not sure of what to make of my calculation. If I multiply my  $4.22 \times 10^{-34}$  Js by  $\pi/2$ , I get approximately  $h$ . If I divide by 4, I get approximately  $\hbar$ . Perhaps an expert on angular momentum can help me out.

The path of the entron's circle within the photon gives the photon its frequency. The lengths of the two diameters ( $d$  and  $d'$ ) range over 18 orders of magnitude with the smallest entron diameter being about  $0.9339 \times 10^{-18}$  m and its corresponding photon diameter is ( $0.9339 \times 10^{-18}$  m  $\times$  911) about  $0.8485 \times 10^{-15}$  m. The largest entrons have diameters  $d'$  longer than one meter and their corresponding radio wave photons have diameters,  $d$ , about 911 times larger. The distance the entron has to travel in the photon to complete one full circle is equal to  $\pi d$  (the circumference of the circle), so the time to complete one cycle at its speed of  $2c$  is  $t = \pi d/2c$  and the time for the photon to travel forward one wavelength is  $t = \lambda/c$ , so:

$$\begin{aligned} \lambda/c &= \pi d/2c, \text{ so} \\ \lambda &= \pi d/2 \text{ and} \\ d &= 2\lambda/\pi = \text{about } 0.6366 \lambda. \end{aligned}$$

The **two tronnies** in the entron are **leap-frogging** each other as shown in **FIGS. 2C and 2D** (attached), from my book. The entron **must** travel at **twice the speed of light** ( $2c$ ) in the photon's circle, so that each of the two tronnies can always stay just ahead of their own Coulomb forces traveling at a speed of  $c$ . **FIGS. 3 and 4** are "snapshot" drawings of a photon showing the paths of the entron within the photon. **FIG. 3** shows a large number of snapshots taken as if by Superman traveling at the speed of light beside the photon. In **FIG. 4** the photographer is stationary taking snapshots while the photon passes by. Please note in **FIG. 4** that during one wavelength of each cycle of the photon (which cycle corresponds to one wavelength of the entron's photon), the **forward speed** of the entron ranges from **minus  $c$  to plus  $3c$  to minus  $c$** . This feature of every photon is going to become extremely important when we show how the **God Particles** (the neutrino entrons and the neutrino photons) are released from **Black Holes** (in the center

of each galaxy and in the center of each universe) as neutrino photons to produce the **gravity** that holds the galaxies and universes together. “**Table A**” above is a copy of **Table V** from my 2014 book, **TRONNIES** but includes a few corrections. This table is a list of 22 entrons and photons providing features of examples of the full range of the electro-magnetic spectrum. All educated people are aware that photons have a frequency and a wavelength. **Almost nobody is aware that the frequency and the wavelength of every photon is a consequence of its entron traveling in a circle at a speed, exactly equal to twice the speed of light and forward at the speed of light.** All photons and all entrons are exactly alike except they range in size and energy over 18 orders of magnitude.

In **Table A (Continued)** below, I have added two columns listing photon frequencies and photon diameters for the 22 example photons of the entire entron-photon spectrum from the radio wave photons to gravity carrying neutrino photons. Readers should be impressed with the two new columns. They show typical photon frequencies and diameters ranging over 18 orders of magnitude (**from a few kilohertz to somewhat less than a trillion-trillion hertz**) and (**from  $8.485 \times 10^{-16}$  meter to more than about 78.9 meters**). (A frequency of more than  $2 \times 10^{23}$  hertz is a lot of spinning!!) Most people may be surprised to learn that blue, green and red light have diameters in the range of a little less than 30 microns to a little more than 40 microns and frequencies of about 4.6 to 6.5 hundred thousand gigahertz. This is probably because they just have not bothered to think about the size of a photon. If they had thought about the size of a photon, they might have concluded that photons would have needed to have sizes between 30 and 40 microns (with entrons almost a thousand times smaller) so that the photons could spread out on the back of our eyeballs in a way that would allow our eyes and our brain to image our American flag at 100 yards. At the back of our eyeballs the entron (of each photon which is 911 times smaller than the photon) is able to convey the information carried by the photon to our brains through our optic nerves so we are able to see what we are looking at.

Most readers, who have not read my book or watched my video, may not be convinced that a photon along with its entron is the carrier of gravity or that the carrier of gravity comprises an entron with a diameter of less than a billionth of a billionth of a meter with a frequency of about  $2.247 \times 10^{23}$  cycles per second. (**Some may not believe even if they have read my book and watched my video.**) So far, I know of only one person who is convinced that I have discovered the secret of the Cosmos; that person is me. Based on my success so far, I suspect that few people are going to be convinced that I have discovered the secrets of the Cosmos until I am awarded the **Nobel Prize in Physics**. That is why I need at least one of those Nobel Prizes in Physics.

**My discovery of the entrons and the internal structure of photons is a second reason why I should be awarded the Nobel Prize in physics.**

#### **THE GOD PARTICLES**

##### **The Neutrino Entron and the Neutrino Photon**

As explained above the smallest entron in the Cosmos (with a diameter of about  $0.9339 \times 10^{-18}$  meter) is the **neutrino entron**. According to my model all neutrino entrons in the Cosmos are the exact same size with a diameter of about  $0.9339 \times 10^{-18}$  meter. The neutrino entron’s photon is the **neutrino photon** with a diameter of about  $0.8485 \times 10^{-15}$  m; and all neutrino photons in the Cosmos are also the exact same size of about  $0.8485 \times 10^{-15}$  m. To the best of my knowledge, I am the first person in the Cosmos to identify the neutrino entron and the neutrino photon. And I gave them their names and identified them as **God**

**Particles.** Readers should keep in mind that the sizes of entrns and photons are dependent on the speed of light and will change if the speed of light changes.

The Coulomb forces in all entrns integrated around the entron's circle have units of energy (joules and electron volts). The neutrino entron and the neutrino photon are described in detail in **Chapter VI** of my book. **The magnitude of instantaneous attractive and repulsive forces in the neutrino entron in the diametrical direction are exactly equal at "about" 265 million newtons!** The repulsive Coulomb forces between the two tronnies in each entron travel a distance equal to the diameter of the entron circle, while the attractive Coulomb forces travel a shorter distance of about 0.59461 times the diameter as indicated in FIG. 2A (attached) from my book. (Readers are encouraged to check my math using Coulomb's Law [where the instantaneous force between the two tronnies is  $F = kq_1q_2/r^2$ : where  $r$  is the separation [ $0.9339 \times 10^{-18}$  m] of the charges [i.e., the diameter of the neutrino entron's circle],  $k$  is Coulomb's constant [about  $8.99 \times 10^9 \text{ Nm}^2/\text{C}^2$ ] and  $q_1$  and  $q_2$  are the charges of the two tronnies [each about  $1.602 \times 10^{-19}$  coulombs]). I will make it easy for you readers:

$$F = kq_1q_2/r^2$$
$$F = (8.99 \times 10^9 \text{ Nm}^2/\text{C}^2) \times (1.602 \times 10^{-19}\text{C})^2 / (0.9339 \times 10^{-18}\text{m})^2 = 265 \times 10^6 \text{ N.}$$

One newton = 0.2248 pound, so  
F = about 59.97 million pounds!

I will repeat, the **neutrino entron** is by far **the most important particle in the Cosmos**. But it is currently (February 2022 AD), almost completely, **unknown to science**. The neutrino entron, comprised of two opposite tronnies, circling in a perfect circle with a diameter of about  $0.9339 \times 10^{-18}$  m, is the smallest thing in the Cosmos other than tronnies that (according to my model) have no size at all. There is absolutely nothing in the Cosmos other than tronnies that have a size smaller than the diameter ( $0.9339 \times 10^{-18}$  meter) of the neutrino entron. Other than tronnies, all things (including the Plank length and neutrinos) which are supposed to have sizes smaller than  $0.9339 \times 10^{-18}$  meter **do not exist!** So, you readers can forget about them. The neutrino entron has an energy of about **928 MeV** (almost one billion eV) and a mass of about  **$1.65 \times 10^{-27}$  kg (slightly less than the mass of a proton at about  $1.67 \times 10^{-27}$  kg)**. Later on, you will see that every proton is comprised of a high-mass electron that has captured a neutrino entron and two naked positrons. In **Chapter X** of my book, I have estimated the mass of the neutrino entron based on my conclusion that the iron-56 atom with a mass of about 55.934942 amu (about  $92.88221978 \times 10^{-27}$  kg) is comprised of 56 ground-state protons (as components of 14 alpha particles), and 56 ground state electrons (with 30 of the electrons in the nucleus, 28 of which are components of the 14 alpha particles, 2 electrons orbit the alpha particles within the nucleus and 26 electrons orbit the nucleus). I assume that Fe-56 nuclei contain no significant gamma ray entrns. I divide the mass of Fe-56 by 56 to get my estimate of the mass ( $1.6586 \times 10^{-27}$  kg) of a single ground state proton and one electron. **(I remind readers that there are no neutrons in any stable atom.)** I subtract the mass of the ground state electron (two positrons and the one electron, i.e.,  $9.109 \times 10^{-31}$  kg  $\times 3 = 0.00273 \times 10^{-27}$  kg) in the single proton to get my estimate of the neutrino entron mass which is about  $1.657 \times 10^{-27}$  kg. Then I use Albert Einstein's famous formula,  $E = mc^2$ , (with  $c^2 =$  about  $8.988 \times 10^{16} \text{ m}^2/\text{s}^2$ ) to get the energy of the neutrino entron, i.e., about  $1.489 \times 10^{-10}$  J = about 928 MeV. (My model of ground state protons is described in detail beginning on page 16.) If you think about the design of the neutrino entron, you must be impressed with the intelligence of nature, (or if you believe in a Creator) the intelligence of the Creator. Repulsive and attractive forces in the diametric direction in tiny neutrino entrns are exactly equal. Each of these are about 59.57 million pounds and they exactly cancel in the diametrical direction.

(You readers should understand what I mean by the terms “exact” and “about” when writing about these particles comprised of tronnies which are point particles. The tronnies are each a point of focus of Coulomb forces. I do not know if the size of the point is exactly zero or very close to zero. What I do know is that the diameter of the tronnie is very small compared to the size of the neutrino entron which has a diameter of about  $0.9339 \times 10^{-18}$  meter. These tronnies combine (1) to make entrons with diameter ranging from about  $0.9339 \times 10^{-18}$  m to more than one meter or (2) to make electrons and positrons in which the tronnies are circling with diameters of about  $0.9339 \times 10^{-18}$  m. Everything that exists in the Cosmos must be made from these tronnies; so, it has to be that they all must be the same size or a size approaching zero as closely as possible. As suggested above, there are only three things that are made directly from tronnies. They are: (1) electrons and positrons in which three entrons are circling at  $\pi c/2$  with diameters of  $0.9339 \times 10^{-18}$  m and (2) entrons with diameters ranging 18 orders of magnitude from  $0.9339 \times 10^{-18}$  m to more than one meter. The tronnies must be much smaller than  $0.9339 \times 10^{-18}$  m, because in the electron and the positron two of the three tronnies are always passing through the circle of the other tronnie. And tronnies must be interchangeable since the tronnies in entrons combine in pair production processes to make electrons and positrons and electrons and positrons combine to make entrons in annihilation processes. The bottom line is I do not know the exact size of the tronnies, but I do know they are extremely small, and I am fairly certain they are all exactly equivalent to each other except half of them are exactly opposite the other half.)

When the **neutrino entron** is traveling as a photon, the photon is a **neutrino photon**. The wavelength of the neutrino photon is about  $1.335 \times 10^{-15}$  m and the diameter of its photon circle is about  $0.8485 \times 10^{-15}$  m. So, in **one meter** of travel of the neutrino photon, its entron within the neutrino photon makes  $(1\text{m}/1.335 \times 10^{-15} \text{ m})$  about  $0.75 \times 10^{15}$  complete cycles (about 750 trillion cycles!). FIG.4 shows the distance traveled in two wavelengths. **During a small portion of each cycle the neutrino entron will be traveling backward at speeds close to or equal to c (the speed of light, the same speed as its own plus and minus Coulomb forces).** Celestial bodies are comprised of atoms. **Atoms** have sizes in the range of about  $1 \times 10^{-10}$  meter, about **100 thousand times larger** than the **neutrino photon** and about **100 million times larger** than the **neutrino entron**. To the neutrino entron, the internal volume of all atoms is almost entirely empty space. **Later in this paper I will explain that I have estimated that the neutrino photon can travel through celestial bodies, such as stars, planets and moons, with mean-free paths I estimate to be in the range of about 7 million meters before being captured temporally or scattered by an electron or a positron to travel in random directions inside the celestial body.** Ultimately, all neutrino photons illuminating a large celestial body such as a star or large planet, will accumulate in the celestial body and later will be released from the celestial body. During a portion of each of the neutrino entron’s 750 trillion cycles per meter, when the entron is traveling backward at the speed of light or close to the speed of light, its entron is most effective at applying forces on the matter it is traveling through. The first approximately 7-million-meter portion of the neutrino photon’s path at the speed of light will take much less than one second. The entron of the neutrino photon circles with a diameter  $9.46 \times 10^{-16}$  m and a frequency of  $2.242 \times 10^{23}$  cycles per second. **Only this first 7-million-meter portion permits the neutrino photon to produce a gravitational force on things in its path, which force is directed back toward the source of the neutrino photons. After the first capture and release or the first scatter, the travel of the neutrino photon within celestial bodies (such as our sun, our earth or our moon) will have the same mean-free path but the directions will be random directions resulting in no additional gravitation effect directed back toward the source.** However, the additional mean-free paths are very important, since they apply gravitational forces tending to hold the celestial body together. Gravity is discussed in much

more detail beginning on page 39 . All neutrino entrons are exactly alike all other neutrino entrons. When these neutrino entrons are finally released through the surface of the celestial body, they proceed outward in straight lines as neutrino photons to provide the gravity of the celestial body.

As I will explain in detail later, neutrino entrons and their photons are produced in **Black Holes** with the creation of anti-protons and the destruction of protons and anti-protons. These **God Particles** produce the **primary gravity** and **secondary gravity** of every Universe in the Cosmos and every galaxy in every Universe. These neutrino photons fill every nook and cranny in the Cosmos including every universe in the Cosmos and every galaxy in every universe. But they cannot be seen or detected, so they are, to us, “**dark**”. These particles represent the **dark energy** and **dark matter** of the Cosmos. According to my model, the neutrino entron once created cannot be destroyed. All of the neutrino entrons that have ever been created still exist. They can, however, have other lives as:

- the mass/energy of a neutrino photon,
- the carrier of gravity from Black Holes,
- almost all of the mass of protons or and anti-protons and
- one of the entrons utilized in electron-positron pair production.

A neutrino entron temporally disappears in the pair-production event but quickly reappears in the electron-positron annihilation event.

**My discovery of the neutrino entron and the neutrino photon (the God Particles) is a third reason why I should be awarded the Nobel Prize in physics!**

#### **PAIR PRODUCTION AND ELECTRON-POSITRON ANNIHILATION**

Existing explanations of pair production and electron-positron annihilation are both incorrect. These existing explanations propose that a 1.02 MeV gamma ray photon can interact with matter to produce an electron and a positron. And that the combination of an electron with a positron will annihilate both of them to produce two 0.51 MeV gamma ray photons. **Both explanations are incorrect.** It takes **three special photons** to produce an electron and a positron. As I have explained everything in the Cosmos is comprised of tronnies. The simplest combinations of tronnies are **entrons** and **photons** requiring two tronnies each. Each **entron** is two tronnies traveling on the opposite sides of a perfect circle at a speed of  $\pi c/2$ ; and each **photon** is an **entron** traveling in a circle at a speed of  $2c$  and forward at a speed of  $c$ , all as described above in pages 6 through 13, above. **Electrons** and **positrons** are each comprised of three tronnies each. So, three entrons (six tronnies) are required to make an electron and a positron (six tronnies). The correct explanations of pair production and electron-positron annihilation are provided below:

#### **In the course of Pair Production:**

**Three entrons (the  $928 \times 10^6$  MeV entron, the 1.02 MeV entron and the 1.12 KeV entron (see Table A):**

**(1) the  $928 \times 10^6$  MeV neutrino entron (a God particle) with a diameter of  $0.9339 \times 10^{-18}$  meter (the 928 MeV neutrino photon has a diameter of  $0.8485 \times 10^{-15}$  m),**

**(2) the 1.02 MeV gamma ray entron, with a diameter of about  $0.8485 \times 10^{-15}$  meter (the 1.02 MeV photon has a diameter of  $7.722 \times 10^{-13}$  m) and**

**(3) a 1.12 KeV ultraviolet entron, with a diameter of  $7.722 \times 10^{-13}$  meter;**

**comprising a total of six tronnies, combine in pair-production processes to make the electron and the positron, both together, comprising six tronnies. (Remember, the photon of each entron in the Cosmos has a diameter that is about 911 times the diameter of its entron.)** The **neutrino photon**, with a diameter of about  **$8.485 \times 10^{-16}$  meter** ( $911 \times 0.9339 \times 10^{-18}$  m) has the same diameter of about as the **1.02 MeV entron** (i.e.,  **$8.485 \times 10^{-16}$  meter** and the **1.02 MeV photon** has the same diameter of  **$7.722 \times 10^{-13}$  meter** as the **1.12 KeV entron**; so, these three entrons and their photons are resonant with each other. When these particles combine the result is one electron and one positron (i.e., **pair production**). This is radiation energy that has been converted into mass. The particles combine because the diameters of the entrons of the 1.12 KeV photon is equal to the diameter of the 1.02 MeV photon and the diameter of the 928 photon is equal to the diameter of the entron of the 1.02 MeV photons.

**In the course of Electron – Positron Annihilation:**

**The positron will normally quickly combine with a low-energy electron and both will be annihilated and the result is:**

**(1) two 0.511 MeV gamma ray photons each with a diameter of  $1.54 \times 10^{-12}$  meter which are detected as gamma ray photons and**

**(2) one 928 MeV neutrino photon (a God Particle) with a diameter of  $8.485 \times 10^{-16}$  meter which escapes unseen and is not detected.**

This is mass that has been converted into radiation energy. Mass and energy are conserved in both processes. Some of you readers will be aware that electrons and positrons have a mass of about  $9.109 \times 10^{-31}$  kg which is consistent with the energy of the 0.511 MeV gamma ray entrons, but it is not consistent with the mass of the neutrino entron. Later on, I will explain that the “spin” (angular momentum) of each electron is the same as the spin of the proton, both of which is one-half  $\hbar$ . **Science is not aware of the contribution of the neutrino photon in the process of pair production and electron-positron annihilation. These issues are explained in my paper on spin which is available at my web-site, [tronnies.com](http://tronnies.com).** Just go to the home page click on “news”. If you don’t already know it, you will learn that for the electron to have the same “spin” (angular momentum) as the proton; it must have a mass much larger than the currently recognized mass of the electron. Science is aware of the 1.02 MeV gamma-ray photon. Science is not aware of its entron, the 1.02 MeV entron, and science is not aware of either the neutrino photon or its entron, the neutrino entron. The John Ross Model is aware of all of these particles, including the 1.12 KeV ultraviolet entron. You, the reader) may ask, “Where do these neutrino photons and neutrino entrons come from to participate in pair production and electron-positron annihilation?” The simple answer is simple: “They are all over the place.” That is because these God Particles are produced in Black Holes and they are providing the gravity of the Cosmos and they fill the Cosmos and every nook and cranny of the Cosmos.

For example, later on in this paper, in connection with my comments on Black Hole gravity, I have estimated the neutrino photon flux at our solar system, from the Black Hole at the center of our galaxy, as about 54,000 neutrino photons per square meter-second ( **$54,000 \text{ np/m}^2\text{s}$** ). I have also estimated that the neutrino photon flux from other sources including the Black Hole at the center of our Universe, our sun and our moon is not significant compared to the neutrino photon flux from our galactic Black Hole. I

have also discovered that the neutrino photon flux from our earth at the surface of our earth is about one-fourth of the flux our earth gets from our galactic Black Hole. But my assumption is that when our earth is in between us and our galactic Black Hole you, the reader, and I are not radiate by any neutrino photons directly from the Black Hole. We would be shielded by our earth but not from the neutrino entrons from the Black Hole which have been accumulating in our earth.

**My explanation of pair production and electron-positron annihilation is a fourth reason why I should be awarded the Nobel Prize in Physics.**

#### **THE INTERNAL STRUCTURE OF SUB-ATOMIC PARTICLES**

The ancient Greeks thought the basic building blocks of matter were atoms. They were **wrong**. We now know that atoms are comprised of sub-atomic particles. Modern theories, such as the Standard Model of Particle Physics, propose that the nuclei of atoms are comprised of protons and neutrons and that the protons and neutrons are comprised of quarks and that electrons surround the nuclei. Electrons and quarks are supposed to be the basic building blocks of matter. Existing theories also propose a variety of forces including a strong force and a weak force and a force of gravity. These existing theories are also **wrong**. **Everything in the Cosmos is made from tronnies and nothing but tronnies**. In this paper I will explain how, during a period of many trillion earth years, nature has utilized the same basic model to produce: (1) the electron and the positron, (2) the entron and the photon (3) the proton and the anti-proton and (4) the alpha particle. With these sub-atomic particles, it is possible to describe the entire Cosmos.

**Long, long ago, many trillion years ago, long before the so-called “Big Bang” before there was anything, anywhere, there was nothing, just empty space everywhere. Points with no size, no energy and no charge can exist in empty space without compromising its emptiness. Somehow (and I don’t know how) some of these points in empty space became divided into two equal and opposite parts.** These equal and opposite parts were **point particles** with no mass and no energy; but they each had one property to distinguish themselves from each other. Since the year 1814, that property has been called **“charge”** (or in reference to elements **“elemental charge”**). And the symbol for the **elemental charge** is the letter “e”. But I am not aware that anyone who has provided a good explanation of where the charges could have come from. My model of the Cosmos proposes that the entire Cosmos is completely filled with a great variety of overlapping Coulomb grids through which photons travel at the speed of light and these grids move around in space at a great variety of speeds. These overlapping grids include coulomb grids associated with things such as: universes, galaxies, star systems, planets, moons and other things through which photons and entrons can travel at the speed of light and twice that speed. All things with charge produce coulomb forces that combine to create the coulomb grids. These coulomb grids move through the Cosmos at the same speeds as the things that the coulomb grids are associated with. I explain below how to make a Cosmos once we have tronnies; but I have not explained how we make the tronnies from empty space. But I believe it happened.

I have explained where the charges **may have** come from (i.e., empty space), and I have given the two particles their names (“tronnies”), **“plus tronnies”**, and **“minus tronnies”**. I propose that these plus and minus points particles are each one-half of a point in empty space. **I am not certain what empty space is**. It may be that grids of overlapping Coulomb forces somehow existed before the points in space became

divided. In any event, according to my model, the magnitude of the tronnies' charges has been known for many years. It is respectively plus and minus about  $1.602 \times 10^{-19}$  coulombs. (Scientists before me have measured this elemental charge very accurately to eight decimal places [i.e., about  $1.60217733 \times 10^{-19}$  coulomb]. They were actually measuring the net charges of combinations of tronnies (e.g., electrons, positrons, protons, ions and other charged particles), but indirectly they were measuring the net charges of combinations of my plus and minus tronnies.) The nice thing about having the two particles with equal and opposite charges to work with is that; with these two point charges, it is fairly easy to describe how our entire Cosmos operates (although it has taken me about 20 years and I am still working on it.)

### MY TINKERTOY® ELECTRON MODEL

About 15 years ago I built my first TinkertoY® model of an electron or a positron. That model is also a model of the proton, the anti-proton, and the alpha particle. And the model can also be used to describe the deuteron, the neutron, the triton and the nucleus of the helium-3 atom. **FIG. 7A**, attached, is a photograph (from Page 5 of my book) of my first granddaughter holding my first TinkertoY® model of the electron. Katherine (Kate) Ross was in Junior High School when this photograph was made. She graduated from UC Santa Barbara in 2019.) In my book, I have instructions on page 61 for making a TinkertoY® model of the electron. (Please note that the plastic tubing should be 1/4 inch, not 3/8 inch). I describe a smaller TinkertoY® model (one half the size of my first model) in my "YouTube" video lecture. To see my video explanation, use your computer or smart phone to GOOGLE: "The Ross Model of the Universe". Then click on "The Ross Model of the Cosmos" when it appears on your screen. My lecture lasts about 2.5 hours. But my description of my smaller TinkertoY® model of the electron lasts less than four minutes between 26:00 and 30:00. Just slide the little red ball at the bottom of the screen to the time 26:00 and you can watch and listen to my explanation of the internal structure of the electron using the model. Feel free to watch and listen to the entire lecture if you have the time and are interested in how our Universe and the rest of the Cosmos operate.

My YouTube explanation of the proton starts at 58 minutes, and my TinkertoY model explanation of the alpha particle starts in the lecture at 1 hour and 12 minutes.)

FIG. 5 (attached) shows a top view and a side view of the electron, where the photographers are spinning with the electron at about 160.6 trillion-trillion cycles per second. The sketches show four numbered positions for one cycle of the orbiting tronnies in each view. (Each of the tronnies are circling, at a speed of  $\pi c/2$  within the electron.) The positions of the plus tronnie are numbered 0 to 3. The positions of both of the minus tronnies are also numbered 0 through 3. The positions the plus tronnie's are shown in circles, the first minus tronnie's positions are shown in diamonds and the second minus tronnie's positions are shown in squares. (Each of the two minus tronnies are always attracting, and being attracted by, the plus tronnie and the two minus tronnies are always being repelled by themselves and the other minus tronnie; and the plus tronnie is always repelling itself.) Within the electron the two minus tronnies are circling, at a speed of  $\pi c/2$ , the path of the plus tronnie in a single plane perpendicular to the path of the plus tronnie, 90 degrees behind the plus tronnie! As a result, during each cycle of the electron, the plus tronnie is always positioned half-way in between the planes in which the two minus tronnies circling. So, each of the two minus circle completely around the path of the plus tronnie but only half-way around the electron during each cycle of the electron. After the plus tronnie and the electron has completed two complete cycles, the two minus tronnies will have also completed two cycles around the plus tronnie's path. Since the electron is circling with the same frequency as the plus tronnie; for each of the two minus



tronnies, for the second half of their trips, they will be repeating the first half of their trip. So after two cycles of the plus tronnie all three tronnies are back at their starting position and each of the three tronnies will have travelled the same distance at the same speed within the electron.

For most electrons in the Cosmos, the orbiting is continuous for many billion or trillion years! I encourage you readers to follow these explanations while viewing my TinkertoY® model in my video. Once you understand the paths of the **single plus tronnie** and the **two minus tronnies** in the **electron**; it will be easy for you to understand the paths of the **single high-speed, high-mass electron** and the **two positrons** in the **proton** and the paths of the **4 protons and 2 electrons** in the **alpha particle**.

I will admit that the paths of the tronnies in the electron and the positron is a little complicated, but with my TinkertoY model, it should be easily understandable by the great majority of people. Also, we need to keep in mind that without the electron and the positron, there would be nothing in the Cosmos other than tronnies, entrons and photons. **The evolutionary step of creating electrons and positrons from photons and their entrons has allowed our Cosmos to exist.!**

**For most people understanding the structure of these amazing particles will be impossible without the help of my TinkertoY® model (or a copy of it).** I claim a copyright on my TinkertoY® model. (If and when I am awarded the **Nobel Prize in Physics**, I plan to give my original **TinkertoY® model** to the **Smithsonian Institute**.) Once you, the reader, understand the design of the internal structure of these sub-atomic particles; **I promise you that you will be amazed at the “intelligence” of nature and evolution; or (in case you believe in a Creator) the intelligence of the Creator! My TinkertoY model of the electron is also a model of the positron, the proton, the anti-proton and the alpha particle.**

I have provided a more detailed typed explanation of the electron and the positron in the following two sections. Keep in mind while you are trying to understand the structure of the electron and the positron, that all tronnies must always travel at a speed of exactly  $\pi c/2$  (**about 1.5708c**) in **perfect circles** in order to exist. In the neutrino entron and in the electron and the positron, the diameter of the circles is only about  $0.9339 \times 10^{-18}$  m (a little less than a billionth of a billionth of a meter). **If it takes you a while to fully understand how these three amazing particles work, don't feel bad; it has taken me more than 18 years and I'm still working on it!** Also, remember that many of the smartest scientist on earth have, for the past 200 years, tried to understand the internal structure of these tiny particles without success. Also, keep in mind that Coulomb forces must travel at the speed of light (about 300 million meters per second in a vacuum). This will help you understand that these sub-atomic particles are really spinning and just how fast these sub-atomic particles are spinning!

## THE ELECTRON

**The electron is not a wave function as proposed by Quantum Mechanics or a fundamental particle as proposed by the Standard Model.** The **electron** is comprised of **three tronnies**, one plus tronnie and two minus tronnies. A **positron** is comprised of **three tronnies**, one minus and two plus tronnies. The number of positrons in the Cosmos is exactly equal to the number of electrons in the Cosmos. **Naked electrons** and **naked positrons** are electrons and positrons in their natural (ground) state, having no captured entrons, and naked electrons and naked positrons are self-propelled by internal Coulomb forces at a natural velocity of about **2.19 million meters per second**. Naked electrons and naked positrons each have a mass **in the forward direction of about  $9.109 \times 10^{-31}$  kg**. (Naked electrons have a much larger mass in

directions perpendicular to their forward direction.) Naked electrons and naked positrons have a **kinetic energy** ( $\frac{1}{2} mv^2$ ) of 13.6 eV by reason of their natural forward speed and forward mass:

(i.e., Kinetic Energy,  $E = \frac{1}{2} mv^2 = \frac{1}{2} [9.109 \times 10^{-31} \text{ kg}] \times [(2.19 \times 10^6 \text{ m/s})^2] = 21.84 \times 10^{-19} \text{ kg/m}^2/\text{s}^2 = 21.84 \times 10^{-19} \text{ J}$ .)

Joules and electron volts are both energy units. One electron volt is equal to about  $1.602 \times 10^{-19}$  joules; so:

$$21.84 \times 10^{-19} \text{ J} / 1.602 \times 10^{-19} \text{ J/eV} = 13.6 \text{ eV}.$$

but no other energy. (**The naked electron has no electrical energy!**) I have attached as FIG. 5 which is a top and side view of the naked electron. (**Naked electrons have mass and charge, but they have no electrical energy!**) The two drawings by my son, Marshall, are improved versions of FIG. 5 from my 2014 book. They are precision computer drawn top and side views of an electron showing four snap-shot positions of the plus tronnie labeled 0, 1, 2 and 3 in tiny circles and the two minus tronnies labeled 0, 1, 2 and 3 in tiny diamonds and squares.

I believe the tronnies in the electron are infinitely precise mainly because the three tronnies are each a point particle with no dimension, and the positions of the tronnies are at points of focus of Coulomb forces. According to my **John Ross Model**, each of the three tronnies are continuously located at a point focus of its own Coulomb forces and the Coulomb forces of the other two tronnies, with each tronnie circling with a constant precise diameter of about  $0.9339 \times 10^{-18} \text{ m}$  at a speed of  $\pi c/2$ . Tronnies, being point particles with a charge of plus or minus  $e$ , require that each tronnie travel in a circle at a speed of  $\pi c/2$  as explained in the preceding section. I do not know the precise diameter of the circles traveled by each of the three tronnies in the naked electron. {Since the speed of the tronnies is a function of the speed and the distance traveled by the tronnies will vary as the speed of light changes.} I am confident that the diameter is about  $0.9339 \times 10^{-18}$  meter and whatever the length of the diameter is, it must be exactly the same for each tronnie, probably for all electrons in the Cosmos. It is very important that everything in the electron must be precisely located because all three of the tronnies in the naked electron must be resonant with each other in order for the tronnies to exist as a point particle. This is because the points, that are the tronnies, are a focus point of Coulomb force waves, coming from three perpendicular directions. In FIG. 5 four positions (labeled: 0, 1, 2 and 3) of each of the three tronnie are designated on the drawing by small darkened numbered spots on the path of each of the plus tronnies. Four positions of each of the two minus tronnies are labeled 0, 1, 2, 3 with the first minus tronnie in diamonds and the second minus tronnie in squares. Please notice that each of the two minus tronnies **follow and lead** the plus tronnie by 90 degrees in a plane that is exactly perpendicular to the path of the plus tronnie with the paths of the minus tronnies being exactly circular with a diameter of about  $0.9339 \times 10^{-18}$  meters. All three tronnies lead and follow themselves by 180 degrees. Therefore, each tronnie arrives at the opposite side of its circle at the exact time as its Coulomb force waves arrives there. As a consequence, each of the three tronnies in the naked electron are repelled by themselves. Each of the two minus tronnies are continually attracted to the plus tronnie that is 90 degrees ahead of the plane of two minus tronnies, and the plus tronnie is continually attracted to both of the two minus tronnies that are circling in the plane of the two minus tronnies 90 degrees ahead of and 90 degrees behind the plus tronnie. A result is a naked electron which is self-propelled at a constant speed of  $2.19 \times 10^6$  meters per second in the upward direction shown on FIG. 5 drawings perpendicular to the plane of the plus tronnie circle.

The reader should notice that both of the minus tronnie's are traveling upward in the side view in FIGS. 5. as they each pass once through the center of the plus tronnie's circle during each cycle of the plus tronnie. As explained above each naked electron circles with a frequency of 160.8 trillion-trillion cycles per second. So, for the naked electron, both minus tronnie pass through the center of the plus tronnie's circle, giving the electron a small upward boost with each passage. That is 321.2 trillion-trillion boosts per second. The plus tronnie does not feel an attractive forces from the minus tronnie's as the minus tronnie's are approaching the plane of the plus tronnie's; however, after passing through the plane of the plus tronnie's circle, the plus tronnie does feel the attractive Coulomb forces from the minus tronnie's. This is what gives the naked electron its natural forward speed of  $2.19 \times 10^6$  meters per second in the upward direction as shown in FIGS. 5 drawings. **(The reader needs to keep in mind that in regions where the speed of light is different from  $3 \times 10^8$  m/s, times and distances may need some adjusting.)**

Each of the three tronnie's in the electron and the positron, circle with a diameter of about  $0.9339 \times 10^{-18}$  meter, equal to the diameter of the neutrino entron. The **attractive and repulsive Coulomb forces** from the tronnie's **expanding at the speed of light in circles** propel the tronnie's in the circles clockwise as shown in FIG. 5 drawings, at their speed of  $\pi c/2$  (faster than the speed of light). Each of the tronnie's must travel at this speed in order to meet its own Coulomb force on the opposite side of its circle. This means that the **naked electron** and the **naked positron** must **spin** with a frequency of  $160.6 \times 10^{24}$  cycles per second, **160.6 trillion-trillion cycles per second!**

In the naked electron the one plus tronnie circles with a diameter of about  **$0.9339 \times 10^{-18}$  meter** at a speed of  $\pi c/2$ . My smaller TinkertoY® model (displayed at 26:00 minutes in my YouTube video) shows (with four yellow spools) four positions of the single plus tronnie as it circles at a speed of  $\pi c/2$  and each of the four positions are separated by 90 degrees. (The eight radial slots in the yellow spool in the large TinkertoY® model are separated by 45 degrees. In my larger model (see FIG. 7A, attached), I utilize all eight slots and in my smaller model I use only 4 of the 8 slots.) At each position around the plus-tronnie circle, the plus tronnie is always at a focus point of a repulsive Coulomb force wave **coming from itself at a speed of c** (the speed of light) across a diameter of the plus tronnie's circle. The plus tronnie in the electron is circling at a frequency of **160.6 trillion, trillion cycles per second!** But the electron is at the same time circling with the same frequency as the plus tronnie. So, from the view of an outside observer, each of the two minus tronnie's travel only half-way around the electron while the plus tronnie has traveled all the way around the electron. And each of the two minus tronnie's circle the path of the plus tronnie with the exact same size circle 90 degrees behind and 90 degrees ahead of the plus tronnie. In my smaller TinkertoY® model one of the two minus tronnie's is passing through center of the plus tronnie's circle providing an attractive Coulomb force on the plus tronnie at each of the four positions of the plus tronnie. Each of the two minus tronnie's lag the other minus tronnie by 180 degrees in the plane of minus tronnie's circle. So, both of the minus tronnie's are always simultaneously located on opposite sides of the minus tronnie's circle 90 degrees **behind** and **ahead of** the single plus tronnie. Each of the tronnie's is circling with a diameter of about  $0.9339 \times 10^{-18}$  meter and each tronnie travels at a speed of **exactly**  $\pi c/2$ . This diameter of about  $0.9339 \times 10^{-18}$  m is exactly the same as the diameter of the neutrino entron. Within the electron the paths of the two minus tronnie's are each the same length as the path of the plus tronnie during one cycle of the plus tronnie. However, the electron is circling with the same frequency as the plus tronnie; so, the each of the two minus tronnie's advance only half-way around the electron during one plus tronnie circle.

**On each pass through the center of the plus tronnie's circle, each minus tronnie is traveling in the forward direction of the electron's path which applies an attractive force on the plus tronnie and gives the electron a natural forward speed of about  $2.19 \times 10^6$  meters per second.** A result is that each of the two minus tronnies is always intersecting an attractive Coulomb force wave from the plus tronnie, and the plus tronnie is always intersecting a Coulomb force wave from each of the two minus tronnies. And all Coulomb forces exactly balance in diametrical directions, so that **electrons can be stable and self-propelled forever!** Also, very important, this natural speed of  $2.19 \times 10^6$  meters per second means that the **naked electron** (i.e., an electron that **has not captured an entron** to become an **energetic electron**) is **self-propelled** at a speed of  **$2.19 \times 10^6$  meters per second** in the upward direction as shown in the side view of FIG. 5 with all tronnies traveling clockwise as shown in the Top View of FIG. 5. If the electron is flipped over, it will be circling counter clockwise instead of clockwise and its forward direction will be downward at  **$2.19 \times 10^6$  meters per second**. So, the great majority of the electrons in the Cosmos that are orbiting nuclei of atoms are traveling at the exact same speed of  **$2.19 \times 10^6$  meters per second**. This is also the reason why almost all electrons are naked electrons (in their ground state) do not lose energy and fall into the nuclei of atoms. Naked electrons get their electrical energy (in the form of electron-volts) by capturing entrons. If an entron captured by an electron orbiting the nucleus of an atom, has an energy which less than 13.6 eV, the entron reduces the natural speed of the electron causing the orbiting electron to jump to a higher orbit. When the entron departs the electron, it may leave as a photon creating a spectral line.

Existing models (including quantum mechanics) propose that the “**spin**” of the electron is not real, and that the “spin” is some kind of quantum mechanical function or fiction. As explained above the electron spin is **extremely real** at about  **$160.6$  trillion-trillion cycles per second** giving it the same “spin” as that of the proton, which has a measured mass of about 1,836 times the electron's mass. This spin of the electron is basically the orbiting of the two minus tronnies and the plus tronnie making up the electrons. Each of the three tronnies are producing speed-of-light Coulomb forces that are traveling at the speed of light all of which are producing a Coulomb grid that is defining the electron. All forces cancel in the diametrical directions of the electron. But these forces provide the orbiting electron with a natural speed of about  $2.19 \times 10^6$  meters per second as described above, permitting electrons to orbit atomic nuclei in perfect synchronization as long as all electrons are in their ground state and orbiting at the same speed. The electron's velocity direction is perpendicular to its spin direction. Readers interested in “spin” of the electron should download a copy of my paper, “Particle Spin is Real”. Just click on “News” at **tronnes.com**. I explain why the electron and the proton have the same “spin”.

Valence electrons in atoms absorb low-energy entrons which circle through the valence electrons in the same direction as the two minus tronnies which slows down the valence electrons to a slower speed which causes the electron to orbit the atomic nuclei farther from the nuclei than the ground-state electrons. These valence electrons are mostly unstable and will usually reject the low-energy entron which exits the atoms as low energy photons producing spectral lines and allowing the valence electron to drop to a lower energy state or to its zero-voltage ground state. Spectral lines, especially spectral lines of the hydrogen atoms are discussed in detail in the **Chapter XXVI** of my book, **TRONNIES – The Source of the Coulomb Force.**

## THE POSITRON

(Sadly, most educated people in the United States are not familiar with positrons. This is sad because positrons are extremely important in our Universe and in the Cosmos. And the number of positrons is **exactly equal** to the number electrons in our Universe and in the Cosmos. You, hopefully, will understand the importance of positrons when you have finished reading this paper. In the meantime, if you are not aware of the current understanding of science, regarding positrons; you may want to GOOGLE, “positrons”.)

The positron, comprised of one minus tronnie and two plus tronnies, is the anti-particle of the electron; the positron is exactly opposite the electron. It is impossible to **make** an electron without also making a positron (i.e., via pair production). Instantaneous forces in the electron and positron are in the millions of newtons. As explained above, electrons and positrons annihilate each other when and if they meet, releasing three entrons, in the form of three photons, together comprising six tronnies. Almost all positrons are hidden from view inside of protons. Each **proton** in the Cosmos is comprised of a **high-energy, high-mass electron and two positrons**, but the electron remains separate from the two positrons in the proton as will be explained in the plus tronnie section (page 22); and happily, the electron does not annihilate either of the two positrons. And, since nearly all positrons are contained within protons; positrons and electrons currently rarely meet in most regions of the Cosmos. These facts, **currently unknown to science**, are the reason atoms have evolved from entrons, electrons and positrons.

Neither the electron nor the positron can be destroyed except in the process of electron-positron annihilation or created except in a process of pair production. **So, as a result, there is in our Universe and in the Cosmos, the exact same number of positrons as electrons!** All electrons in their ground state are exactly alike. And all positrons in their ground state are exactly alike. And the electrons and the positrons are exactly opposite each other. All of this means that the Cosmos is a lot more symmetric than other theories predict.

**My discovery of the internal structure of the electron and the positron is a fifth reason why I should be awarded the Nobel Prize in Physics!**

## **THE SIZE OF THE ELECTRON**

As explained above, the tronnies within the electron and the positron circle with a diameter of about  $0.9339 \times 10^{-18}$  meter. I explain above that that that tronnie diameter results from the pair production process in which the 1.02 MeV photon combines with two other photons with entron diameters or photon diameters that are resonant with the 1.02 MeV photon. This leads us to the question of what is so special about the neutrino entron, since entrons can range in size by 18 orders of magnitude. In my electron model of the naked electron, the answer is that there has to be a limit as to how small the diameter of an entron can be. My model of the Cosmos assumes that the minimum diameter of entrons is about  $0.9339 \times 10^{-18}$  meter. I picked that number by taking a guess that the smallest entron must be resonate with the 1.0214 MeV gamma ray photon that is involved with pair production.

The 1.0214 MeV photon has a wavelength of  $1.213 \times 10^{-12}$  m and a diameter of  $7.72 \times 10^{-13}$  m and an entron diameter of  $8.485 \times 10^{-16}$  m, which is the diameter of the neutrino photon which

has an entron with a diameter of about **0.9339 X 10<sup>-18</sup> m**. As indicated by my FIG. 5 drawings, the electron has with a long dimension and a short dimension and it spins about a line through the fat part of the electron half-way between the long ends of the electron. The natural speed of the electron is  $2.19 \times 10^6$  m/s in a direction perpendicular to the spin direction and upward if the spin is clockwise and downward if the spin is counterclockwise.

I discussed pair-production and electron-positron annihilation on Page 13 above. Once the entrons of the three photons involved in pair production are combined, the entron of the 1.0214 MeV takes over the organization of the six tronnies of the three photons. The two tronnies circling with a diameter of 1.0214 MeV pulls the two tronnies of 1.13 KeV photon and the two tronnies of the neutrino photon into the  $0.8485 \times 10^{-15}$  m circle of the two tronnies on the 1.0214 MeV entron. Once the six tronnies are combined the two tronnies of the neutrino entron takes over with its two tronnies circling with a diameter of  $0.9339 \times 10^{-18}$  m; so that now the six tronnies are all circling with diameters of  $0.9339 \times 10^{-18}$  m. This process is similar to a beautiful spinning ice skater pulling in her arms and one leg to greatly increase her spin frequency without any change in her angular momentum. Apparently, in this combination of six tronnies, the two tronnies of the neutrino entron keep their spin with a diameter of  $0.9339 \times 10^{-18}$  m and the other four tronnies are attracted to the center of the plus tronnies and the minus tronnies of the neutrino entron that are circling with a diameter of  $0.9339 \times 10^{-18}$  m and a frequency of  $160.8 \times 10^{24}$  cycles per second. So that the other two minus tronnies and two plus tronnies are circling through the circle of the plus and minus tronnies of the neutrino entron. This configuration must have been extremely unstable so that, the other two minus tronnies combined with the plus tronnies of the neutrino entron to form an electron and the other two plus tronnies combined with the minus tronnies of the neutrino entron to form a positron. Then the electron and the positron head off in opposite directions. In both cases all three tronnies in the electron and the three tronnies in the positron are circling with diameters of about  $0.9339 \times 10^{-18}$  m. The shapes of the electron and the positron are described by my electron model with a wide dimension of  $0.9339 \times 10^{-18}$  m and a long dimension of about  $1.8678 \times 10^{-18}$  m. Both the positron and the electron spin about the center of the plus tronnies circle in the electron and the minus tronnies circle in the positron so the paths of the electron and the positron are both  $1.8678 \times 10^{-18}$  m wide.

### **THE PROTON**

When a neutrino entron of the neutrino photon is captured by a ground-state zero-voltage electron, the neutrino entron increases the electron's **electrical energy** from **zero** to about **928 MeV** and the electron's mass is increased from about  **$9.109 \times 10^{-31}$  kg** to slightly more than  **$1.65 \times 10^{-27}$  kg**. The neutrino entron forces the electron which is self-powered with a diameter of  $1.867 \times 10^{-18}$  m (twice the diameter of the  $0.9339 \times 10^{-18}$  m diameters of the 3 tronnies in the electron) to travel in a **circle** with a diameter equal to about  **$0.8485 \times 10^{-15}$  m**, which is equal to the **diameter of the "path" of the neutrino entron in the neutrino photon**. This diameter is also equal to the **diameter of the 1.0214 MeV gamma-ray entron in the 1.0214 MeV photon (see Table A)**. Since the diameter of the neutrino entron is the same size as the diameters of the three tronnies in the electron and the positron, **neutrino photons are resonant with electrons and positrons and can be captured by electrons and positrons**. When that happens, the

neutrino entron (with an energy of 928 MeV and a mass of  $1.56 \times 10^{-27}$  kg) becomes a part of the electron and the neutrino entron drives the electron in a circle the size of the neutrino photon circle with a diameter of about  $0.8485 \times 10^{-15}$  m at a speed (faster than the speed of light) of  $\pi c/2$ .

**The proton is not comprised of quarks and gluons.** Every proton in the Cosmos is made of:

- (1) One naked electron (comprised of one plus tronnie and two minus tronnies , with all three tronnies circling at a speed of  $\pi c/2$  (about 1.5708 times the speed of light), where the two minus tronnies are orbiting the path of the plus tronnie 90 degrees behind and 90 degrees ahead of the plus tronnie,
- (2) One neutrino entron (**a God Particle, with a mass of about  $1.65 \times 10^{-27}$  kg**) which has been captured by the naked electron to cause the naked electron to become a **high-energy, high-mass electron** with its three tronnies each circling with a diameter of about  $0.9339 \times 10^{-18}$  m circling with a speed of  $2c$  (twice the speed of light), with a diameter equal to the diameter of the neutrino entron's path in the neutrino photon (i.e., about  $0.8485 \times 10^{-15}$  meter) and
- (3) **two naked positrons, circling, the path of the single high-energy, high-mass electron**, 90 degrees ahead of and 90 degrees behind the single high-energy, high-mass electron with a speed, within the high-energy, high-mass electron, of  $\pi c/2$  to create a naked proton with a natural speed of  $0.402 \times 10^8$  m/s and a radius equal to the diameter of the high-energy, high-mass electron, i.e., about  $0.8485 \times 10^{-15}$  meter and a diameter of about  $1.697 \times 10^{-15}$  meter.

The naked electron and the two naked positrons have a combined mass of about  $27.33 \times 10^{-31}$  kg which when added to the  $1.65 \times 10^{-27}$  kg mass of neutrino entron and the mass of the naked electron give the naked proton a mass of **about  $1.653 \times 10^{-27}$  kg**. The naked proton itself is circling with the same frequency as the high-energy, high-mass electron. The two positrons each pass twice, through the center of the electron's circle, defining a forward direction, for each complete cycle of the naked proton, applying a coulomb force on the circling electron to give the naked proton a natural speed of about  $0.402 \times 10^8$  meters per second in the forward direction.

FIG. 6 is a **simplified** sketch from my 2014 book of a naked proton. I call it the "naked proton" because it has not captured any entrons to slow it down to a speed close to zero, so the proton can capture an electron to become a hydrogen atom. **My first three-dimensional TinkertoY® model of the electron** is shown in **FIG. 7A** attached is **also a model of the proton. A smaller 3D model is shown and explained at 58 minutes into my 2.5-hour YouTube video lecture. The smaller model represents 4 positrons of the single electron and 4 positions of each of the two positrons in the proton** during one cycle the naked proton. The two positrons lead and follow each other on separate paths separated by 180 degrees and each of the two positrons are separated from themselves by 360 degrees. **(In the proton each of the two positrons circle once through the circular path of the single high-energy electron's circle during each complete cycle of the proton.)** The four positions of the single high-energy, high-mass electron in the model are spaced apart by 90 degrees and the diameters of the path of the electron and each of the two positrons are exactly the same at about  $0.8485 \times 10^{-15}$  meter. This diameter is also the same diameter as the diameter of **the path of the neutrino entron in the neutrino photon**. Each of the two positrons in the proton, circle exactly through the center of the electron's path in a plane that is perpendicular to the electron's circular path, 90 degrees behind and 90 degrees ahead of the single circling electron in perfect synchronization with Coulomb force waves from the single high-energy, high-mass electron. The neutrino entron in the high-energy, high-mass electron represents more than 99.9 percent of the mass of the

proton. Like the two minus tronnies in the electron, each of the two positrons pass once through the center of the electron's circle during each cycle of the proton. (FIG. 6 shows 2 views of the proton which has the same shape as the electron.) In the case of the proton, the two positrons pass in the same direction through the center of the single electron's path. As a result, the **naked proton is self-propelled** by internal Coulomb forces at a natural speed of about  $0.402 \times 10^8$  meters per second (about 0.134 times the speed of light). Each naked proton typically collects about **8.37 MeV of gamma ray entrons** from its environment to slow down enough to become an energetic proton and the nucleus of a hydrogen atom. **(The reader may want to make a note of this 8.37 MeV of entron energy collected by the proton to become an energetic proton in the hydrogen atom, because it is going to provide the fusion energy in stars that is needed to fuel solar systems.)**

As indicated by the TinkertoY® models and **FIG. 6**, the naked proton spins about an axis through the center of the **electron's circle** which has a precise diameter which is about  **$0.8485 \times 10^{-15}$  meter** but the width of proton in its long dimension is twice the diameter of the electron circle, i.e., about  **$1.695 \times 10^{-15}$  meter**. **(According to Wikipedia, scientists have recently determined that the measured radius of the proton is between  $0.84$  to  $0.87 \times 10^{-15}$  m corresponding to an average diameter of about  $1.71 \times 10^{-15}$  meter.)** On page 66 of my 2014 book, **Tronnies, The Source of the Coulomb Force**, I explain that the natural direction of the proton is perpendicular to the plane of the proton's electron circle within the proton. So, a proton spinning about the proton's axis through the center of its electron's circle produces a cylindrical path of the proton through space having a diameter of about  $1.7 \times 10^{-15}$  meter. So, the measured **radius** of the proton is very consistent with my model of the proton. Also, notice that the path of a positive proton creates a cylindrical path through space where the surface of the cylindrical path is all positive and the central portion is partly positive and partly negative. Readers may want to compare this feature of the Proton with an important corresponding feature of the **alpha particle** which I will explain beginning on page 26.

As explained above, the naked proton can slow down to near zero by capturing several gamma ray entrons that circle through the center of the proton's electron's circle applying a breaking force on the proton. When the proton slows down to near zero speed, it may capture an electron to form a hydrogen atom. A combination of entrons with energies totaling more than 8.37 MeV will drive the proton in a direction opposite its natural direction.

**The reader should make a note here that each proton contains one neutrino entron (a God Particle) with a mass of about  $1.65 \times 10^{-27}$  kg and an energy of about 928 MeV ( $1.486 \times 10^{-10}$  Joule). Each proton contributes about 8.37 MeV of gamma ray energy when four hydrogen atoms are fused to make helium. This contribution to the operation of the Cosmos is important, but equally important is the contribution of the proton to the operation of the Cosmos when protons combine with anti-protons in Black Holes. This combination results in the annihilation of the proton and the anti-proton and the release of two neutrino entrons. I will explain below how one of these neutrino entrons is utilized by the Black Hole to produce another anti-proton and the other neutrino entron is released by the Black Holes to provide the gravity of the Black Holes and to seed the Cosmos with neutrino entrons, most of which will be combined with electrons and positrons to produce more hydrogen atoms that will replace the hydrogen atoms and their protons consumed by the Black Holes.**

**Unknown to science, there are, in the Cosmos and our Universe, the exact same number of positrons as electrons. Nearly all of the positrons have been, until now, hidden from science inside protons.**



## MURRY GEL-MANN WAS WRONG – THERE IS NO SUCH THINGS AS QUARKS AND GLUEONS

Most scientists erroneously believe that:

- 1) protons and anti-protons are comprised of three quarks (with fractional charges),
- 2) gluons hold the quarks together and
- 3) nuclei of atoms are made of protons and neutrons.

**All three beliefs are false! There are no such things as quarks and gluons! There are no such things as fractional charges. And there are no neutrons in stable nuclei.** My **tronnies**, with their charges of plus and minus e, are **the only fundamental particles**. Murry Gel-Mann and George Zweig were wrong in 1964 (four years **after** I received my Nuclear Engineering Degree) and Science has been led astray ever since. **These two scientists were correct that, inside the proton, there are three charged particles**, each with dimensions of about  $10^{-18}$  m, **but these three particles are two positrons (each with a charge of plus e) and one very high-energy electron (with a charge of minus e) that has captured a neutrino entron with a mass of about  $1.65 \times 10^{-27}$  kg.**

**There is no such thing as fractional charges.** And the electrons and positrons are comprised of tronnies. Coulomb forces (not gluons) hold the proton together, and a very high-energy entron (**the neutrino entron**, with two oppositely charged tronnies) **provides almost all of the mass of the naked proton** which is self-propelled but captures about 8.37 MeV of gamma ray entrons which are released in stars in nuclear fusion processes to provide the energy to power the galaxies of Universes.

### THE ANTI-PROTON

The anti-proton is **exactly** opposite the proton, comprised of one high-energy, high-mass positron (that has captured a neutrino entron) and two naked electrons. Lucky for us, it is relatively difficult for nature to make an anti-proton (except in **Black Holes**). That is because everywhere in our Universe (except in Black Holes) there is relatively very few free positrons and an enormous number of free electrons. This is because almost all positrons are located inside protons. When an anti-proton is created, it is quickly attracted to a proton and both are annihilated (releasing two neutrino entrons, three electrons and three positrons and lots of energy), and the positron is quickly annihilated by its combination with an electron to release three photons. Proton, anti-proton annihilation occurs almost entirely in Black Holes where two neutrino entrons are released to provide the gravity of the galaxies and universes.

At some time, long-long ago, in the early Cosmos probably many trillion years ago, long before any fictional **Big Bang** event (about 13.75 billion years ago that most people think was the birth of our Universe), there were the same number of anti-protons as protons in the Cosmos. And they quickly attracted each other and each combination annihilated the pair. **For this reason, the building of atoms was stymied.** However, later on, in this early Cosmos, **protons began to dominate anti-protons** and when that happened, creation of protons was favored over the creation of anti-protons. This escalated the production of protons vs anti-protons, since the first step in the creation of a proton or an anti-proton is the combination of a neutrino entron with a free electron or a free positron. Since each proton created removes two positrons from the positron population and only one electron, neutrino entrons were more likely to combine with a free electron than a free positron. This process has continued until almost all of the positrons in the Cosmos are contained in protons. So free positrons outside of atomic nuclei and

outside of Black Holes are very rare. This allowed protons to combine with other protons, electrons and neutrons in stars to form neutrons, deuterons, tritons and, best of all: **alpha particles**.

(It is possible that there are universes in the Cosmos where anti-protons dominate protons, creating anti-universes. If there are any such anti-universes, let's hope they keep their distance!)

**My discovery of the internal structure of the proton and the anti-proton is a sixth reason why I should be awarded the Nobel Prize in Physics.**

### **THE WONDERFUL ALPHA PARTICLE**

**Alert!** You readers should read this section carefully because it may turn out to be the most important section of this paper. Each **Alpha particle** is comprised of **four naked protons traveling 90 degrees apart in a  $0.8485 \times 10^{-15}$  m circle at a speed of  $\pi c/4$  and two electrons circling, with the same size diameter, through the center of the proton circle at a speed of  $\pi c/2$** . Coulomb forces in the alpha particle have increased the speed of the two electrons from their natural speed of about  $2.19 \times 10^6$  m/s to  $\pi c/2$  (about 1.5708 times the speed of light, about  $4.7124 \times 10^8$  meters/second). These Coulomb forces of each of the two electrons traveling at the speed of light across the diameter of the alpha particle are repelling the two electrons forcing the two electrons to travel in circles at a (faster than the speed of light) speed of  $\pi c/2$ , twice the speed of each of the four protons.

In the process of **hydrogen fusion** to make alpha particles in stars, the low-speed energetic protons shed their 8.37 MeV of gamma ray neutrons as gamma ray photons:

- (1) to provide a portion of the **hydrogen-to-helium fusion energy** and
- (2) to produce the four high-speed naked protons traveling initially at their natural self-propelled speed of about  $0.402 \times 10^8$  meters per second (i.e., about 0.134 c).

The four high-speed naked protons are attracted to the center of the two circling high-speed electrons to form the alpha particle. **Coulomb forces traveling at the speed of light within the alpha particle also increase the speed of each of the four protons from their natural speed of about 0.134 c (about  $0.402 \times 10^8$  m/s) to a speed of  $\pi c/4$  (about  $2.3562 \times 10^8$  m/s) to be synchronized with the Coulomb forces of the two very high-speed electrons.**

My TinkertoY® model of the electron, explained above, in my book (**TRONNIES**) and in my 2.5-hour lecture, is **also** a model of the alpha particle. (In my YouTube video I discuss the internal structure of the alpha particle using my TinkertoY® model of the electron. This discussion is at 1 hour and 12 minutes in the 2.5-hour lecture.) **The diameter of the four-proton circle and the diameter of the circles of the two electrons are exactly the same length at about  $0.8485 \times 10^{-15}$  m. Each of the two electrons circle once through the center of the four-proton circle perpendicular to the path of the four protons. Each of the four protons are attracted by the two electrons circling through the center of the four protons. Each of two electrons are passing once through the center of the four-proton circle during each cycle of the two electrons. But each of the two electrons travel only half way around the alpha particle during each cycle of each electron. The other electron simultaneously circles the other half of the alpha particle as shown in FIG. 7. Each of the two electrons is following itself by 360 degrees in the electron's circle and the other electron by 180 degrees in a plane perpendicular to the path of the four protons. Both electrons pass in the same direction through the center of the four protons as demonstrated by my TinkertoY**

model. Both of the two electrons are continually attracted by the Coulomb forces of each of the four proton that is circling 90 degrees ahead of and 90 degrees behind the plane of the two electrons' circle and each of the two electrons is repelled by itself (across the diameter of the alpha particle from its own positions 180 degrees behind itself, all around its path. Each of the two electrons complete its circle around the path of the four protons at the exact same time as each of the four protons complete their paths around the alpha particle.

As described by my TinkertoY® model, each of the two electrons of the alpha particle makes two passes through the center of the alpha particle and returns to its initial position twice during each complete cycle of the alpha particle; but each of the two electron travels only half-way around the alpha particle during each cycle of the alpha particle. Its partner travels the other half-way. The four protons are traveling at one-half the speed of the two electrons. The four protons return to their initial positions twice during each full cycle of the alpha particle. The frequency of the alpha particle is the same as the frequency the four protons. But each of the two electrons, simultaneously, makes two complete cycles around the four-proton path, during each complete cycle of each of the four protons and the complete cycle of the alpha particle. According to my model, the frequency of the alpha particle is  $11.31 \times 10^{24}$  cycles per second (11.31 trillion-trillion cycles per second!). If that ain't real spin, I don't know what is. However, no (angular momentum) "spin" of the alpha particle is detected. This results from the fact that, from the view of an outside observer; each of the two electrons, during each cycle of the alpha particle, is traveling in the same direction twice as fast as each of the four protons. The alpha particle is spinning clockwise in the FIG. 8 drawing and in the TinkertoY® model, and the paths of the two electrons completely enclose the paths of the four protons at all times. The consequence of all of this is that all of the components of the alpha particle are continuously riding in a grid of Coulomb force waves of themselves and the other components of the alpha particle.

I estimate the natural speed of the naked alpha particle in the upward direction as shown in the side view of the naked alpha particle in FIG. 7 at about  **$3.208 \times 10^7$  meters per second**. This natural natural speed in the upward direction is the result of the combined passage of the two minus tronniees passing upward through the center of the four-proton circle a total of four times during each complete cycle of the alpha particle. The alpha particle slows down to speeds close to zero by capturing about 7.44 MeV of gamma ray energy; then it may capture two electrons to become a helium-4 atom. The 7.44 MeV is my estimate of the gamma ray energy of the alpha particle in the He-4 atom. This energy of the 7.44 MeV per alpha particle is released in stars as the stars utilize the alpha particles to create isotopes more massive than helium, up to iron-56 and nickel-60. Please note that the gamma ray energy in the alpha particle (at about 7.44 MeV) is actually much less than the combined gamma ray energy of each of the four protons (i.e., 8.37 MeV for a total of 33.48 MeV) that were combined to form the alpha particle. This 7.44 MeV of gamma ray energy of the alpha particle is released in medium range stars and larger stars as the alpha particles are combined to make heavier atoms up to iron-56 and nickel-60. This creation in stars of stable isotopes between He-4 and Fe-56 and Ni-60 is explained beginning on page 64 in this paper in a section entitled: "Medium Size Stars Produce Tiny Alpha Stars".

As alpha particles are combined in stars to create atoms with masses up to the masses up to Fe-56 and Ni-60, portions of their gamma ray energy are released, so that the nuclei in Fe-56 and Ni-60 contain no significant mass of gamma ray entrans. I understand that nuclei of stable atoms heavier than Ni-60 are produced in large stars in super nova events and these heavier atoms require additional gamma ray

energy and mass in the form of mostly gamma ray entrans and also the addition of up to 26 electrons as will be described later on. **I repeat again there is no neutrons in any stable isotope.**

The internal structure of the alpha particle is very similar the internal structure of the proton as described on page 18, the alpha particle with a net charge of plus 2 spins about an axis through the center of its four circling protons and travels in the direction of its axis. Its two electrons circle upward through the center of the proton circle attracting the four protons upward as shown the side view of the aloha particle (**FIG. 7**) and giving the alpha particle its natural speed in a cylindrical path which is mostly positive in the inside and **entirely negative at and near the surfaces of the path of the alpha particle**, allowing alpha particles to be attractive to other positively-charged alpha particles at nuclear distances of about  $10^{-15}$  meters.

### **My Stable Isotope Chart**

Readers are encouraged to review my 13-page, **Ross Model Stable Isotope Chart** on the Internet at "**tronnies.com**". **Just click on "news" at my home page and scan down.** In this chart the internal structure of all stable isotopes (and a few radioactive isotopes) are described. Alpha particles are the basic building blocks of atoms. In many configurations, with other alpha particles, **alpha particles can be attractive to other alpha particles with Coulomb forces, despite each of the alpha particles having a net charge of +2.** At **very close distances** (almost touching), the circling electrons of one of the alpha particles provide a repulsive force on the electrons of neighboring alpha particles keeping the alpha particles apart. Alpha particles also repel other alpha particles at larger distances of more than about  $10^{-14}$  m. But at nuclear distances in the range of about  $1.2 \times 10^{-15}$  meters, **attractive forces** of the electrons on protons and protons on electrons can balance **repulsive forces** so that combinations of nothing but alpha particles and neutral gamma ray entrans can be dynamically stable for billions of years. **For example, the nuclei of carbon-12 (C-12), O-16, Ne-20, Mg-24, S-28, S-32, Ar-36 and Ca-40 are all comprised of only alpha particles (each alpha particle having a mass of about 4 atomic mass units) and charge-neutral gamma ray entrans with relatively insignificant masses.** Please note that the zero spin isotopes containing no protons include gamma ray entrans with energies ranging from 7.44 MeV at He-4 to 15.84 MeV for Si-28 then decreasing to zero MeV for Fe-56 and Ni-60, then gradually increasing to 307.39 MeV for plutonium-240 (Pu-240). The nucleus of argon-40 (**Ar-40**) is comprised of 10 alpha particles, charge neutral gamma-ray entrans and two electrons. Berilium-8 (**Be-8**) is comprised of two alpha particles, but it is radioactive and decays very quickly (with a half-life of only  $7 \times 10^{-17}$  s) into (guess what?) **two alpha particles!** The nucleus of the helium-4 (**He-4**) atom is comprised of one alpha particle. Alpha particles and all of the nuclei of the above listed isotopes all have a net measured "**nuclear spin**" of zero, the same as the spin of the alpha particle. The alpha particle, as explained above, is actually spinning at a frequency of about **11.31 trillion-trillion cycles per second**. The "spin" of the two electrons exactly cancels the "spin" of the four protons in every alpha particle. (Readers interested in nuclear spins should review my 2015 paper entitled "Particle Spins Are Real also at my "**tronnies.com**" website.

As explained above, at distances of about  $1.2 \times 10^{-15}$  m, alpha particles (comprised of four protons and two electrons) can be **attractive** to each other despite their net charge of plus two. Nature uses this fact to create stable and very long-life atomic nuclei with positive charges from helium to uranium without neutrons or the need for a magical "**strong force**". As explained above, the above listed nuclei between C-12 and Ca-40 contain only alpha particles and neutral entrans. All of these nuclei, like alpha particles have spin of zero. All stable or long-life atomic nuclei more massive than Ca-40 are comprised of alpha particles, electrons and (except possibility Fe-56 and Ni-60) high-energy neutral entrans. In addition, the

stable and long-life nuclei may also contain up to but no more than three protons and up to but no more than 27 electrons. As shown in my **Stable Isotope Chart** nuclei heavier than Ca-40 require between 2 and 26 electrons and additional high-energy entrans for stability in addition to alpha particles. Nuclei between Ar-40 and U-236 comprised of only alpha particles and an even number of electrons between 2 and 26 and an increasing number of high-energy entrans all have a spin of zero like the alpha particles.

**There are no neutrons in any stable atomic nuclei. There is no “strong nuclear force” holding nuclei together.** Atomic nuclei are held together by very strong attractive and repulsive Coulomb forces. The integrated Coulomb forces of all circling particles exactly cancel in diametrical directions. Alpha particles are the principal building blocks of atomic nuclei. My stable isotope chart describes, **for the first time**, the internal structure of the approximately 300 stable isotopes and a few unstable isotopes. **I identify 177 isotopes that have a spin of zero. They all are comprised of only alpha particles or only alpha particles, two protons and an even number of electrons.** In my chart I include my rules for creating the chart. There are a few obvious mistakes in the chart, inconsistent with my rules. **See if you can find one.** Check the single stable **gold** isotope. The very important internal structures of U-235, U-236, Pu-239 and Pu-240 atomic nuclei (atomic bomb material) are described at page 24 and 25.

### **The Size of Alpha Particles**

I have recently learned as I type this section (January 15, 2022) that the measured size of the alpha particle, **comprised of four protons**, is almost exactly (or exactly) **the same** as the size of **a single proton**; i.e., about **0.8485 X 10<sup>-15</sup> m.** This does not seem possible and my understanding is that the “science community” is attempting to explain what is going on. I suggest that this paper provides the explanation.

**My description of the alpha particle and its identification as the basic building block of atomic nuclei is a seventh reason why I should be awarded the Nobel Prize in Physics!**

### **THE NEUTRON**

This is my description of a neutron. **This section is important because most of you readers have been taught that** atomic nuclei are comprised of protons and **neutrons. That is not correct!** Stable atomic nuclei are comprised of alpha particles (up to 59), electrons (up to 27) and protons (up to 3) and up to about 300 MeV of neutral gamma ray entrans. **There are no neutrons in any stable isotope!** Neutrons do exist, but they are very unstable. Each neutron in the Cosmos is comprised of one proton and one electron and gamma ray entrans. Neutrons are produced in fission reactions of uranium-235 and plutonium-239 as described in detail later on. **Neutrons have a half-life of about 10.3 minutes.** The basic structures of the electron and the proton have been described above. Both are self-propelled by internal Coulomb forces. As explained above and in my book (Chapter VII), electrons have a natural speed of  $2.19 \times 10^6$  m/s, but they can be slowed down to zero speed by capture of entrans with energies totaling about  $2.18 \times 10^{-18}$  joule (13.6 electron-volts), and protons have a natural speed of  $4.02 \times 10^7$  m/s and can be slowed down to close to zero by the capture of entrans with energies totaling about  $1.34 \times 10^{-12}$  joule (about 8.37 MeV). As explained above, alpha particles are the basic building blocks of atomic nuclei, not protons and neutrons. **All existing physics and chemistry books will need to be changed to correct this error!** However, this is not to say that neutrons are unimportant. **Neutrons are very important;** they are required in the process of building atoms in stars. With its 10.3-minute half-life, the charge neutral neutron (comprised of one electron and one proton), is able to **sneak through** the cloud of negative

electrons orbiting atomic nuclei (which electrons could not do). The neutron can also easily move right into the middle of positively charged atomic nuclei (which protons could not do). And once within the nucleus, the neutron happily decays within a few minutes (with its 10.3-minute half-life) into an electron and a proton. This permits the electron and the proton to join other electrons and protons to produce **the real building blocks of atomic nuclei**: the **wonderful alpha particles**, as described in the above section.

Nuclear fission of uranium-235 (U-235) and plutonium-239 (Pu-239) almost always produces two fission products and two or three fission neutrons as explained on pages 24 and 25 in a section below entitled "Uranium and Plutonium". Each of these two or three fission neutrons is a combination of **one** of the **three protons** from the U-235 or the Pu-239 atom and one of the 27 very high-energy electrons also from the inside of the uranium or the plutonium nucleus. The very high-energy electron has captured one or more gamma ray entrons with a total energy in the range of about 5 MeV. A single 5 MeV ( $8.01 \times 10^{-13}$  joule) entron has a diameter of about  $1.733 \times 10^{-16}$  meters (smaller than a proton). As explained in Chapter IX of my book, a 5 MeV entron would drive the electron at a speed of 1.414 times the speed of light. If the high-energy electron is not contained inside atomic nuclei, the entron would drive the electron in a circle with a diameter 911 times larger than the diameter of the entron (i.e., for the 5 MeV entron, and with a diameter of  $1.733 \times 10^{-16}$  m, the circle would be about  $1.58 \times 10^{-13}$  m). This circle is about 84,000 times larger than the electron and about 93 times larger than the proton diameter at about  $1.7 \times 10^{-15}$  meter or the diameter of an atomic nuclei, but much smaller than the size of a typical atom.

Gamma ray entrons inside U-235 or Pu-239 nucleus will be combined with one of the 27 electrons in the nucleus of the U-235 or Pu-239 atom creating in each case a high-energy electron confined within the nucleus. So, when the U-235 or Pu-239 atom absorbs a neutron and splits apart in the fission process, each of two or three of the three protons in U-235 or Pu-239 will combine with one of the high-energy electrons to be released as high-energy neutrons.

The kinetic energy of fission neutrons is typically in the range of several MeV, and the neutrons are accurately referred to as "fast" neutrons. But they quickly lose their high speed and energy through collisions. The loss of energy of the fission neutrons corresponds to an increase in the diameter of entrons captured by the electron in the neutron. **After a few minutes (about 15 minutes is the average life of a neutron) the electron breaks off from the proton and the neutron no longer exist.** During the approximately 15-minute average life of a charge-neutral neutron it may penetrate the paths of the electrons orbiting the nucleus of an atom and be captured by the nucleus of the atom (for example, a fissionable atom such as U-235 or Pu-239 or an atom of a control rod of a fission reactor). A neutron added to U-235 or Pu-239 will produce U-236 or Pu-240 each of which is very unstable and will typically split in a fission process. If there is no fission, the electron and the proton of the neutron may remain in the nucleus of the capturing atom or one or both may be ejected. If either or both remain, the nucleus will be converted to a different isotope. And if both remain, they will remain as separate particles, **not combined as a neutron.** **For example, if the neutron is captured by a U-235 nucleus (comprised of 58 alpha particles, 3 protons and 27 electrons) and no fission occurs; the proton and the electron in the neutron will combine with the three protons and one of the 27 electrons in the U-235 nucleus to make an additional alpha particle (i.e., 4 protons and 2 electrons) so that the U-235 nucleus becomes a U-236 nucleus with 59 alpha particles, 26 electrons and no neutrons.** Pu-239 absorbing a neutron will be converted to Pu-240. (Please compare the internal structure of U-235 to U-236 and Pu-239 to Pu-240 in my **Stable Isotope Chart available at tronnie.com**. U-236 has a half-life of 23.4 million years and, at the end of its life, decays with the emission of (guess what): an **alpha particle**. The half-life of Pu-240 is shorter

but the decay is also with an alpha particle. The spin of U-235 is  $7/2^-$  and the spin of U-236 is zero. The spin of Pu-239 is  $1/2^+$  and the spin of Pu-240 is also zero. U-236 and Pu-240 nuclei are each comprised of only alpha particles and 26 electrons and gamma ray entrns.

**My explanation describing neutrons and proving that there are no neutrons in stable atoms is an eight reason why I should be awarded the Nobel Prize in Physics!**

### **THE BUILDING BLOCKS OF ATOMS WITH ALPHA PARTICLES**

**Stable atomic nuclei are made in stars and are the combination of up to 59 alpha particles, no more than three protons and no more than 27 electrons. There are no neutrons in stable nuclei!** Neutrons have a half-life of 10.3 minutes and an average life of about 15 minutes.

As explained above **naked protons** are self-propelled by internal Coulomb forces at **a speed of about  $4.02 \times 10^7$  m/s, about 13.47 percent of the speed of light**. In stars and in outer space and other places each naked proton collects several gamma ray entrns with total energies in the range of about  $1.34 \times 10^{-12}$  joules (8.37 MeV) per proton to slow down and become a slow-speed, high-energy proton. The gamma ray entrns slow down the proton enough so that the proton can collect an orbiting electron to form a hydrogen atom. Stars get their enormous energy by the fusion of hydrogen to make deuterium, tritium and alpha particles and all of the heavier nuclei up to Fe-56 and Ni-60. Four hydrogen atoms (each with their 8.37 MeV of entron energy) combine to make the alpha particle and to contribute a total of about 33.5 MeV of gamma ray energy to the star with each fusion. In the core of stars hydrogen molecules and atoms are ionized, so that a high-energy electron and the high-energy proton can exist separately.

The energy of fusion is released in the form of: gamma ray entrns and gamma ray photons during the building of atoms up to Fe-56 and Ni-60). Fe-56 and Ni-60 atoms contain no significant gamma ray entrns. He-4 with a mass of 4.003 atomic mass units (amu) contains an alpha particle with a mass of about 3.9954 amu and about 7.44 MeV (about 0.0076 amu) of gamma ray entrns. Boron-10 with a mass of 10.013 amu is comprised of two alpha particles, two protons and one electron and contains 25.15 MeV of gamma ray entrns. Gamma ray entron energy in atomic nuclei heavier than B-10 decreases gradually as heavier isotopes are produced until the entron energy is **approximately zero** in Fe-56 (with 14 alpha particles) and Ni-60 (with 15 alpha particles). Stable atoms more massive than Fe-56 and Ni-60 are produced in supernova events in massive stars and are comprised of up to 59 alpha particles, up to three protons and up to a total of 27 electrons (and an increasing amount of gamma ray energy/mass). The gamma ray energy in the form of gamma ray entrns in these nuclei increases gradually from about zero in Fe-56 and Ni-60 to about 100 MeV for Gd-158. Nuclei heavier than Gd-158 add about 1.4 MeV/amu or about 5.6 MeV/alpha particle (in the form of gamma ray entrns) as additional alpha particles are added to produce heavier atoms up to uranium and plutonium, each with about 300 MeV of gamma ray entrns.

**My description of the internal structure of all stable nuclei, mostly comprised of mostly alpha particles, is a ninth reason why I should be awarded the Nobel Prize in physics!**

### **URANIUM AND PLUTONIUM**

**The U-235 nucleus is comprised of 58 alpha particles 3 protons and 27 electrons and no neutrons.** When U-235 absorbs a neutron, U-235 is converted to U-236 with 59 alpha particles, 26 electrons and no protons

and no neutrons. The **Pu-239 nucleus is comprised of 59 alpha particles, 3 protons and 27 electrons and no neutrons.** Likewise, when Pu-239 absorbs an unstable neutron, the Pu-239 isotope is converted to Pu-240 with 60 alpha particles and 26 electrons and no protons and no neutrons. As described in my Stable Isotope Chart, I estimate that the nuclei of U-235 and Pu-239 contain respectively about 293.42 MeV and 303.32 MeV of gamma ray entron energy. U-236 and Pu-240 nuclei are very unstable and in most cases they fission immediately after formation. Some of their gamma ray entrons are released as gamma ray photons during the fission of U-236 and Pu-240. And many are retained in the two major fission products of each of the U-236 and the Pu-240. Much of the fission energy is in the form of kinetic energy of the two major fission products. During fission, two or three of the 27 electrons combine with two or three of the three protons in U-235 and Pu-260 to produce two or three neutrons per fission, **never more than three, because there are only three protons in U-235 and Pu-239.** These two or three combinations of a proton and an electron are released from the nuclei in the form of two or three neutrons. If the absorption of the neutron does not produce a fission, the U-235 will be converted to U-236 with 59 alpha particles, 26 electrons and no protons. Pu-239 will be converted to Pu-240 with 60 alpha particles, 26 electrons and no protons. Both U-236 and Pu-240 are radioactive and each decay **with the emission of an alpha particle.** (I repeat, contrary to what we have been taught, there are no neutrons in stable atomic nuclei.)

**My explanation of the uranium and plutonium fission processes (explaining why 2 or 3 neutrons are released with each fission) is a tenth reason why I should be awarded the Nobel Prize in physics!**

(My first job after graduating with a BS Degree in Nuclear Engineering in 1960 was as a Test Engineer at the Shippingport Atomic Power Station, near Pittsburgh, Pennsylvania. There I became particularly aware of the importance of these two or three neutrons released with each fission. Most of these two or three neutrons per fission are released at the time of the fission. These neutrons are called “prompt neutrons”. But much less than one percent of the fission neutrons are retained in a few of the fission products, each of which have a half-life of a few seconds (the two longest being about 56 seconds and 23 seconds). But it is these delayed neutrons that permit precise control of the output of nuclear power plants.

#### **MY STABLE ISOTOPE CHART AND PARTICLE SPIN**

As I have mentioned above, at my web site, “**tronnies.com**”, I have uploaded and claimed a copyright on a 2014 paper entitled, “**Ross Model – Stable Isotope Chart**” describing the internal structure all stable atomic nuclei. You may also want to check out or download my 2016 paper entitled: “**Particle Spins Are Real**” describing the angular momentum of photons, electrons, positrons, protons, anti-protons and alpha particles and confirming that their **spins are real** and are respectively equal to 1,  $\frac{1}{2}$ ,  $\frac{1}{2}$ ,  $\frac{1}{2}$ ,  $\frac{1}{2}$  and zero. (A spin of 1 represents an angular momentum of  $h$ -bar which is about  $4.136 \times 10^{-15}$  electron-volt second ( $1.055 \times 10^{-34}$  joule-second). (If you GOOGLE “Particle Spin” you will see that there is much confusion in the science community about particle spin. My model clarifies **Particle Spin**; including the spin (orbits) of tronnies in sub-atomic particles, the spin of sub-atomic particles in atoms, the spin of protons and electrons in alpha particles and the combination of alpha particles, electrons, protons and entrons to make all of the stable nuclei. **For example, my model describes tronnies in electrons, in positrons and in neutrino entrons, all “spinning” (i.e., circling) at a frequency of about 160.6 trillion, trillion cycles per second.** (Remember, each tronnie is a single point. It is hard to imagine a point spinning, but it is easy to imaging them circling very, very fast.) In every photon in the Cosmos, entrons are circling at a speed of  $2c$  with diameter ( $d$ ) ranging eighteen orders of magnitude, from about  $0.9339 \times 10^{-18}$  m to more than



one meter, each with a radius equal to  $d/2$ . The two papers describe very important physics principles currently unknown to science. The alpha particle's "measured" spin is zero because its two electrons are spinning twice as fast as its four protons, in the same direction, with opposite charges. **My explanation of particle spin is an eleventh reason I should be awarded the Nobel Prize in physics!**

### **EXISTING POPULAR THEORIES ARE BASICALLY INCORRECT**

Before I get deeply into gravity, I think I need to make a few comments, based on my **John Ross Model of the Cosmos**, with respect to the three generally accepted theories that are taught in schools, colleges and universities (including physics in graduate schools) to explain how our Universe operates. These are: **Standard Model of Particle Physics, Einstein Relativity and Quantum Mechanics**. I understand that many scientists will probably (at least initially) disagree with most of my comments regarding these theories, because most living scientists prefer to follow the teachings of some of the most brilliant scientist that have ever lived on earth, including **Max Plank, Albert Einstein, Paul Dirac, Erwin Schrodinger, Stephen Hawking** and **Richard Feynman**. But remember they were **brilliant scientists, not Gods**. Many of their errors are described in detail above, but I have summarized a few these errors below:

#### **Einstein Relativity**

Mass does not increase as a result of high speeds close to the speed of light. Every photon in the cosmos travels **at** the speed of light and has a mass corresponding to its energy. See **Table A** (on page 7). **There is no such thing as space-time**. Time and space are completely separate concepts. Space is nothing, it cannot be curved by massive bodies or anything else. Many things (especially including: my tronnies, entrons, many cosmic ray particles, muons and many galaxies) often travel faster than the speed of light. The energy-mass portion of all photons (i.e., entrons) travel twice the speed of light. At least portions of many or all very far-away galaxies and galaxy clusters that we can image are receding from each other and from the center of our Universe and from our Milky Way Galaxy faster than the speed of light. Existing models propose that time and our Universe began with a Big Bang event as a **singularity** about 13.75 billion years ago. **This explanation for the evolution of our Universe is ridiculous!**

#### **The Standard Model of Particle Physics**

**There are no quarks, no gluons, no neutrinos and no Higgs boson. THESE PARTICLES ARE NOT NEEDED AND THEY DO NOT EXIST!** Tau particles and muons are short-lived, high-energy electrons stripped off atoms by high-speed cosmic protons and alpha particles. Of the seventeen "elemental particles" of the Standard Model only two exist for more than a tiny fraction of a second. These are the photon, the electron and the positron and they are not elemental. The only elemental particles are the plus and minus tronnies. Each photon is comprised of a single entron which is a combination of two tronnies, and the electron and the positron are comprised of three tronnies. **There are no fractional charges**. Other than tronnies, the neutrino entrons are the smallest things in the Cosmos. **Tronnies are point particles probably with no size at all**. The neutrino entron and the neutrino photon are the carriers of gravity. The highest temperature in the Cosmos corresponds to the wavelength of the neutrino photon.

#### **Quantum Mechanics**

Quantum mechanics is difficult or impossible for most people (including me) to understand, although it can provide correct answers to some very complicated problems. I have given up trying to understand

quantum mechanics. Instead, I have developed a much simpler explanation of how the Cosmos works. The electron and the photon are not wave functions. They are real particles. The electron and the positron are each three tronnies circling with a diameter of about  $0.9339 \times 10^{-18}$  m at a speed of exactly  $\pi c/2$ . Each photon is a real particle comprised of one entron circling at a speed of  $2c$  and traveling forward at a speed of  $c$ . The entron's diameters ranges from about  $0.9339 \times 10^{-18}$  m to more than one meter. The photon's diameters are about 911 times the entron's diameter. The entron/photon, the electron and positron, the proton and the anti-proton and the alpha particle are all combinations of tronnies or combinations of things made from tronnies. Gravity is produced in Black holes which radiate neutrino photons that apply a reverse force on the things illuminated by the neutrino photons.

### **Existing Theories Don't Hack It.**

Existing theories do not provide a good logical explanation of the following:

- How the Cosmos could have been created from nothing.
- The internal structures of photons, electrons, protons, alpha particles and all stable atomic nuclei.
- How unstable neutrons could exist in stable atomic nuclei.
- Galactic faster-than-light speeds.
- Black holes.
- Dark matter.
- Dark energy.
- Alpha stars (not neutron stars).
- Orbit speeds of solar systems in galaxies.
- Fundamental particles.
- Pair production and electron-positron annihilation.
- The ultraviolet catastrophe.
- The relative speed of light through Coulomb grids.
- Nuclear fission and chain reactions - why 2 or 3 neutrons per fission?
- Real particle spin of photons, electrons, protons and atomic nuclei.
- Linear pass-through galactic orbits and recycling of galaxies.
- The source of hydrogen in inter-stellar, inter-galactic and inter- universe space.
- Black hole universe gravity and black hole galactic gravity.
- Second-hand and third hand gravity of stars, planets and moons.

My Ross Model of the Cosmos explains all of these things.

**My development of my John Ross Model of the Cosmos as a replacement for the Standard Model, Einstein Relativity and Quantum Mechanics is a twelfth reason why I should be awarded a Nobel Prize in Physics.**

### **THE ULTRAVIOLET CATASTROPHE**

Max Planck is credited to have long ago solved the problem of the ultraviolet catastrophe by assuming that radiation was emitted in the form of discrete packets. He developed a very fancy equation describing photon energy as a function of wavelength that seemed to fit the experimental results. His basic equation relating energy and wavelength was and is:

$$E = hc/\lambda$$

where h and c are constant and  $\lambda$  is the wavelength of the photon. Then people began to believe that nature behaved in accordance with his simple and fancy equations. But it does not. The problem is, if  $\lambda$  approaches zero the energy would approach infinity in both of his equations. We know that there are no photons with infinite energy; so, we still have the catastrophe. My Ross Model solves the problem simply. My model does not allow  $\lambda$  to approach zero. Every entron is two tronnies circling in a perfect circle. According to my model, the smallest entron (the neutrino entron) has a diameter of about  $0.9339 \times 10^{-18}$  m. This estimate is from Chapter XI of my 2014 book, **Tronnies**. My estimate for the size of the neutrino entron is based on my estimate of mass of the naked proton in the iron-56 isotope and my description of the pair production process. According to my model, neutrino entrons are the smallest things in the Cosmos other than tronnies, that probably have no size at all. The neutrino entron's corresponding photon has a wavelength of  $1.335 \times 10^{-15}$  m (the shortest wavelength possible), a diameter of about  $0.85 \times 10^{-15}$  m and the energy/mass of the neutrino entron and its photon are the same at about 928 MeV and  $1.65 \times 10^{-27}$  kg and a temperature of 2.18 trillion Kelvin. There is no Plank length, no Plank time and no Plank temperature.

I do not know the exact diameter of the neutrino entron (but it is about  $0.9339 \times 10^{-18}$  m) or why there are no smaller entrons or other things. What I do know is that the diameter of the entron could not be zero. If it were, the two tronnies would be a point in space with infinite forces between the two tronnies. That does not make sense. I am satisfied that nature or some other force or creator has designated about  $0.9339 \times 10^{-18}$  m as the diameter of the smallest entron. In my opinion, evolution always finds an answer to difficult questions. If anybody has a better explanation, let's hear it.

The reason is that the neutrino entron, at an energy of about 928 MeV, is the **smallest possible entron** (with the highest possible energy) with the **smallest possible entron diameter**, the **smallest possible photon diameter** and the **smallest photon wavelength**. All entrons and photons are exactly alike except they vary, over 18 orders of magnitude, in energy (E), entron diameter (d'), photon diameter (d) and photon wavelength ( $\lambda$ ). The relationships are as follows:

$$E = 12.3894 \times 10^{-7} \text{ eVm}/\lambda.$$

$$E = 7.8938 \times 10^{-7} \text{ eVm}/d.$$

$$E = 8.665 \times 10^{-10} \text{ eVmd}'.$$

Also:

$$d = 2\lambda/\pi = 0.6636 \lambda,$$

$$d = 911d' \text{ and}$$

$$\lambda = 1,411d'$$

Also:

$$c = \lambda f, \text{ where } f \text{ is the frequency of the photon,}$$

$$\lambda = c/f,$$

$$f = c/\lambda.$$

It is very important to recognize that the most energetic entron is the smallest entron at a diameter of  $0.9339 \times 10^{-18}$  meter, and that this entron and its photon, the **God Particles**, the most important particles in the Cosmos. The neutrino entron provides almost all of the mass of the proton and almost all of the mass of the Cosmos; however, it is currently unknown to science. At the other end of the spectrum are

the radio wave entrans and photons. Their diameters are relatively very large. I don't know how large, but their sizes are more than a billion-billion ( $10^{18}$ ) times larger than the smallest entrans and photons.

### A COSMOS FROM EMPTY SPACE

Before there was anything anywhere there was nothing just empty space, everywhere. There were no galaxies, no stars, no planets, no molecules, no atoms, no protons, no electrons, no photons, just complete nothingness. There are, however, things that can exist in empty space without compromising its emptiness. Those things are points. Points have no energy, no mass, no volume, no properties of any sort. Somewhere, sometime, long, long ago, long before any Big Bang that some people believe to be the birth of our Universe; somehow (and I do not know how) some of these points became divided into two parts. What do you get when you divide a point into two parts? The two parts are also points, with no energy, no mass and no volume; but each of the two parts did have one property and that property has been called "charge". The charges of the two parts were exactly equal but opposite. We could have named this property anything, but we named the property, "charge" without realizing that these two parts were points. And more recently we designated the charges as "e". And because this property was equal and opposite, it is natural that we called one of the two charges "plus e" and the other "minus e", and we have given "e" a value of about **1.602 177 33 coulombs**. I determined that the two fundamental charges had to be points, without any volume. Otherwise, if either of them had any volume, parts of it would attract or repel other parts with infinite forces I gave the two parts their names: "tronnies" ("plus tronnie" and "minus tronnie"). And in this paper, I have shown that everything in the Cosmos is made exclusively, 100 percent, from these two particles, the tronnies!

One nice thing about tronnies is that once we have the tronnies, we can describe the internal structures of all sub-atomic particles that we need in order to describe everything in the Cosmos. These include the things we have written about above. Examples are the three tronnies in every electron and in every positron, two tronnies in every entron and one entron in every photon. A naked proton is comprised of two positrons and one electron combined with a neutrino entron that provides more than 99 percent of the naked proton's mass. Naked electrons and naked positrons have a mass and a velocity (and kinetic energy), but no electrical energy. They need to capture one or more entrans to have electrical energy. The one or more entrans give the electron and the positron electrical energy (i.e., a voltage). The entron also speeds up or slows down electrons and positrons. Energetic electrons, energetic positrons and energetic protons include at least one additional lower energy entron. Another nice thing about the tronnie is that we can forget about a lot of things that currently have been proposed but do not exist. These proposed things include quarks, gluons, neutrinos and Higgs bosons. With my model, tronnies provide the answers.

Tronnies always travel in perfect circles with one or two other tronnies, all at a speed of  $\pi c/2$ . At this speed and in perfect circles, each tronnie is always at a focus of its own Coulomb forces and also at the focus of its partner's Coulomb forces (in the entron) or its partners' Coulomb forces (in the electron and the positron). Electrons and positrons have a natural self-propelled speed of about 2.19 million meters per second. At sub-atomic levels, extremely fast speeds are normal. (As I explain in my book, the self-propelled speed of the electron can be calculated from Niels Bohr's equations from more than 100 years ago.) An alpha particle is four protons, two electrons and some entrans. Stable atoms are made primarily of alpha particles, up to three protons, up to 27 electrons and a variety of entrans. Molecules are made from atoms. Everything else in the Cosmos, including planets, moons, stars, galaxies and universes are

made from combinations of these things. Almost all of the celestial bodies move about with tremendous speeds, many move much faster than the speed of light. Isolated anti-particles, other than the two tronnies, (which are anti each-other) such as positrons (almost all of which are hidden in protons) are rare in our Universe (except for anti-protons in Black Holes, as discussed above, and some exotic experiments), but maybe not in other universes. Anti-alpha particles are possible, and there could be anti-universes, but I doubt it.

Now that we are aware of the tronnies, we can speculate about the steps needed to produce the Cosmos. My guess is that the time from the creation of the first two tronnies and the present time was many trillion earth years, maybe many trillion-trillion earth years. Major steps included:

- 1) Entrons production should have been easy, once tronnies became available.
- 2) Photons from entrons should have been very easy.
- 3) Three special entrons combine to make electrons and positrons.
- 4) Electrons, positrons and neutrino entrons combine to form protons and anti-protons
- 5) It takes a while for protons to dominate anti-protons.
- 6) Protons collect electrons to make hydrogen atoms.
- 7) Four energetic protons and two electrons produce alpha particles in stars.
- 8) Alpha particles and up to 3 protons, electrons and entrons form atoms up to Fe-56 & Ni-60.
- 9) Supernovas create larger atoms with up to 59 alpha particles up to 3 protons and 27 electrons.
- 10) Some supernovas develop into Black Holes.
- 11) Galaxies form around Black Holes.
- 12) Some Black Holes combine to form Monster Black Holes to create Universes.
- 13) Galaxies are attracted to Monster Black Holes to develop linear pass-through orbits.
- 14) Our Milky Way Galaxy is one of those galaxies.

It took a while, but here we are!

### COULOMB GRIDS

Coulomb grids are associated with things that move around in the Cosmos, such as universes, galaxies, star systems, stars, planets and moons. These bodies move relative to each other at a great variety of speeds. Their Coulomb grids move with the bodies. According to my model, gravity in the form of neutrino photon fluxes develop around the celestial bodies and form Coulomb grids in the spaces around celestial bodies. The speed of photons in the Coulomb grids is the speed of light, but the speed of light can be just about any speed depending to some extent on the make-up of the Coulomb grid and to a large extent on the speed of the Coulomb grids. For example, the speed of light in a vacuum, with an index of refraction of 1.0, relative to the Coulomb grid the light is passing through, is about  $300 \times 10^6$  meters per second. In water, with an index of refraction of 1.333, the speed of light is  $(300 \times 10^6 \text{ m/s})/1.333 = \text{about } 225 \times 10^6 \text{ m/s}$ . In air with an index of refraction of 1.000293 the speed of light is about  $299.912 \times 10^6 \text{ m/s}$ . And the speed of light is relative. For example, you will see on page 60 of this paper where I discuss the Hubble Flow and estimate that our Milky Way Galaxy is receding from the center of our Universe at a **net speed** of about 13.358 million meters per second. (I understand that our Milky Way Galaxy is receding at a speed of about 13.956 million meters per second, but it is also being attracted toward the center of our Universe at a speed of about 0.6 million meters per second. (If you are walking down the aisle of a train car at 4 miles per hour opposite the direction of the train traveling at 40 miles per hour, your speed relative

to the train tracks would be 36 miles per hour.) If we measure the vacuum speed of light coming from the center of our Universe, we will measure it at about 300 million meters per second, but its speed relative to the center of our Universe will likely be something different. As a beam of light passes from one Coulomb grid at the speed of light into a second Coulomb grid moving at a different speed, the photons in the beam speed up or slows down so as to travel at the speed of light in the second Coulomb grid. Existing theories can't explain how this happens. My explanation is easy. The diameters of the entron and its photon increase or decrease as necessary so that each photon continues at the speed of light relative to the second Coulomb grid. If the second Coulomb grid is moving faster than the first Coulomb grid in the direction of the photon, the diameters of the photon and its entron will increase. The photon's wavelength will also increase but its frequency and energy will decrease and the light will be red-shifted. If the second Coulomb grid is moving slower than the first, the result is opposite and the light will be blue shifted and the frequency and energy will increase and the wavelength will decrease. Albert Einstein should have **correctly** determined that the "**measured**" speed of light in a vacuum is always constant at 300 million meters per second. Instead, he determined **incorrectly** that the actual speed of light in a vacuum is always 300 million meters per second, so **time** had to slow down if you go very fast. Time in my model passes at the exact same rate everywhere in the Cosmos no matter how fast or how slow you are moving or where you are in the Cosmos.

In my 2014 book I discuss Coulomb grids in **Chapter XXIII**. I did not make the important connection between Coulomb grids and our Universe, our Galaxy, our solar system, our earth, our moon and gravity. As you, the reader, are now learning gravity provided by the God Particles (the neutrino entron and its neutrino photon) are what holds our Universe together. Primary gravity is provided by neutrino entrons and neutrino photons released from Black Holes (Monster Black Holes and Galactic Black Holes). The Monster Black Hole at the center of each universe provides the gravity that controls the entire universe. The Galactic Black Hole at the center of each galaxy provides the gravity that controls the entire galaxy. In the case of our Universe, I have guessed that the MBH at the center of our Universe consumes (on the average) one sun-size star per earth day. A sun-size star has a mass of about  $1.59 \times 10^{30}$  kg. Almost all of that mass is provided by protons. The mass of a proton is about  $1.672 \times 10^{-27}$  kg. This would allow the MBH to radiate neutrino photons into our Universe at the rate of about  $0.95 \times 10^{57}$  np/earth day or about  $1.1 \times 10^{52}$  neutrino photons per second. I am assuming that our Milky Way Galaxy is currently located about 650 million lightyears from the MBH in the center of our Universe. The surface area of a sphere with a radius of 650 million light years is about  $4.75 \times 10^{50}$  m<sup>2</sup>. So, the  $1.1 \times 10^{52}$  neutrino photons per second would be spread over  $1.1 \times 10^{52}$  m<sup>2</sup>. This means that people living anywhere in our MWG who have a cross section of about **0.5 m<sup>2</sup>** are being subjected to the gravitational attraction produced by about 23 neutrino photons passing through their bodies **every two seconds** from the **MBH 650 million lightyears away at the center of our Universe**.

So, everywhere in our Universe which basically is all of the space surrounding the Monster Black Hole out to a radius of about 50 billion lightyears that is not near a celestial body such as a galaxy, a star system or a planetary system, light should travel at the speed of light relative to the MBH at the center of the universe. Astronomers report that there are about 100 to 400 billion galaxies in our Universe that are receding from the MBH in the middle of our Universe. My Ross Model proposes that there are an approximately equal number of additional galaxies approaching the MBH as there are receding from it. These galaxies are all traveling at great variety of speeds and directions. Each of these galaxies has at its center a Black Hole radiating gravity in the form of neutrino photons. These neutrino photons surround

the Black Hole and fill the space within the galaxy modifying the Coulomb grid produced by the MBH. So, the Coulomb grid within the galaxy is going to be a hybrid grid that is going to determine the speed of light traveling within the galaxy. Since the MBH is at a great distance its effect on the speed of light within the galaxy is going to be approximately constant. The effect of the Galactic Black Hole at the center of the galaxy is going to vary depending on the distance to the Galactic Black Hole. In regions of the galaxies close to stars, planets and moons, the Coulomb grid is also going to depend on gravity carrying neutrino photons from the stars, planets and moons. The speed of light in regions close to the surface of these smaller bodies is going to be strongly affected by the speeds of the bodies.

These neutrino photons completely fill **our Universe**. I have estimated that typical galaxies such as our MWG are orbiting the MBH in linear pass-through orbits with cycles with distances such as 200 billion lightyears with turn-arounds at about 50 billion light years from the MBH. When a typical galaxy (such as our MWG) is close to 50 billion light years from our MBH the neutrino flux from our MBH is greatly reduced, but (for our MWG), I estimate it is still significant at about 0.034 np/s-m<sup>2</sup>. This is because we estimate that the effective cross section of our Milky Way Galaxy is about 6 X 10<sup>28</sup> m<sup>2</sup>. For example: 0.034 np/s-m<sup>2</sup> X 6 X 10<sup>28</sup> m<sup>2</sup> = 2,040 X 10<sup>24</sup> np/s, more than 2 thousand trillion-trillion neutrino photons per second will be trying to pull our MWG back toward the MBH located at the center of our Universe.

**My concept of Coulomb grids providing grids through which light could travel at the speed of light is a thirteen reason why I should be awarded a Nobel Prize in Physics.**

## THE FORCE OF GRAVITY

### Newton Gravity

With the above background, we can finally get to my explanation of the force of gravity. In 1687 Sir Isaac Newton described the force of gravity between two massive bodies in space with the following simple formula:

$$F = Gm_1m_2/r^2$$

Where F is the **gravitational force**, G is the gravitational constant, equal to 6.67408 X 10<sup>-11</sup> Nm<sup>3</sup>/kg-s<sup>2</sup> and m<sub>1</sub> and m<sub>2</sub> are the **masses** of celestial bodies. During the 334 years since 1687, no one has been able to logically explain what produces this gravitational force or explain why the gravitational force seems to travel at the speed of light. Apparently, most people, including most scientists, believe the best explanation is the one given by Albert Einstein's general theory of relativity. Einstein's theory proposes that the mass of massive objects such as stars, planets and moons produce "curvatures of space" and that objects moving in space follow these curvatures. The problem is that Einstein's curvature-of-space theory does not make sense and it is not correct. **Space is nothing, just complete emptiness. It cannot be curved.** I have a better explanation. **My 2014 explanation is provided in Chapter XX "Black Holes and Gravity"** of my book, **Tronnies, The Source of the Coulomb Force**. I have recently developed some additional important new ideas that I now provide in this paper, along with corrections of a few mistakes and a summary of my explanation from **Chapter XX**.

### Estimated Masses and Sizes of Big Things in our Galaxy and our Universe

Estimated masses and sizes of our Universe, our galaxy, our sun, our earth and our moon are provided in the following table:

	Mass		Diameter	
Moon	$7.36 \times 10^{22}$ kg		$3.47 \times 10^6$ m	
Earth	$5.98 \times 10^{24}$ kg		$1.27 \times 10^7$ m	
Sun	$1.59 \times 10^{30}$ kg		$1.39 \times 10^9$ m	
Our Milky Way Black Hole	$4.80 \times 10^{36}$ kg		$5.40 \times 10^8$ m	$5.7 \times 10^{-8}$ ly
Our Universe Black Hole		about	$2.58 \times 10^{11}$ m	$2.7 \times 10^{-3}$ ly
Milky Way Galaxy	$2.00 \times 10^{42}$ kg	about	$1.04 \times 10^{23}$ m	$1.1 \times 10^9$ ly
Our Universe at least	$1.46 \times 10^{53}$ Kg	at least	$9.20 \times 10^{26}$ m	$9.7 \times 10^{10}$ ly
The Cosmos	Unknown		Unknown	

### Protons and Anti-Protons

There is at least one (almost always, one) **Galactic Black Hole** is at the center of every galaxy in our Universe. There is also at least one **Monster Black Hole** at the center of every universe in the Cosmos. Black Holes are created by collapses of massive stars. Black Holes are also the hottest things in the Cosmos. I estimate the temperature of Black Holes at about 2.16 trillion degrees Kelvin, which corresponds to the wavelength of neutrino photons (God Particles) (based on **Wein's Displacement Law**, where the wavelength,  $\lambda = 2.98 \times 10^{-3} \text{ m-K/T}$ ). The wavelength of the neutrino photon is:  $\lambda = \text{about } 1.335 \times 10^{-15} \text{ m}$ . So, the temperature, T, of the Black Hole is:

$$T = 2.98 \times 10^{-3} \text{ m-K} / \lambda = 2.98 \times 10^{-3} \text{ m-K} / 1.335 \times 10^{-15} \text{ m} = \text{about } 2.16 \times 10^{12} \text{ K}$$

This temperature, 2.16 trillion Kelvin, according to my model, is the highest possible temperature in the Cosmos. This is because the wavelength of the neutrino photon is the shortest possible photon wavelength corresponding to the diameter of the neutrino photon. The energy of the neutrino photon is about 928 MeV. This corresponds to a mass of about  $1.65 \times 10^{-27}$  kg which is the mass of the neutrino entron and the neutrino photon. The wavelength  $\lambda$  of all photons is about 1,431 multiplied by the diameter of the photon's entron. (See the **Table A (Continued)** on page 8 above and page 42 of my book and the last listed entron in the chart. (The diameter of the neutrino photon is about  $8.485 \times 10^{-15}$  m and the diameter of the neutrino entron is  $0.9339 \times 10^{-18}$  m.) Also see and listen to my discussion of neutrino entrons and neutrino photons at 52:00 minutes of my YouTube video.) At this temperature ( $2.16 \times 10^{12}$  K) molecules and atoms and their internal particles are broken down in the Black Holes into protons, electrons and entrons, and each proton is further broken down to two positrons, one electron and one neutrino entron. Protons are plentiful in the Cosmos and in Black Holes. **Black Holes create anti-protons at a rate determined primarily by an average rate at which the Black Holes consume portions of their galaxies or their universe.** The process is described below:

**A single naked positron may capture a neutrino entron of a neutrino photon with its energy of 928 MeV to convert the naked positron to a high-energy, high-speed high-mass positron. The high-energy, high-speed, high-mass positron travels in a circle with a diameter of about  $0.8485 \times 10^{-15}$  m and a speed of  $\pi c/2$  about  $1.5708c = \text{about } 4.71 \times 10^8$  m/s. Each high-energy, high-mass, high-speed circling positron collects two electrons that circle in a single plane separated by 180 degrees through the center of the high-energy, high-mass positron's  $0.8485 \times 10^{-15}$  m diameter circle 90 degrees ahead of and 90 degrees behind the positron to form a naked high-speed anti-proton with a net charge of minus e. The naked anti-proton captures about 8.37 MeV of gamma ray entrons to slow down to become a low-speed, high-energy, high-mass anti-proton with a speed close to zero and a charge of minus one e. This is an anti-**



**proton. Protons and anti-protons combine**, and both are annihilated at the rate at which the anti-protons are created, **each annihilation releasing:**

- (1) **two neutrino entrons, each representing an energy of 928 MeV,**
- (2) three electrons and three positrons, and
- (3) about 16.74 MeV of gamma ray entrons,

with each annihilation.

One of the neutrino entrons is utilized by the Black Hole to produce another anti-proton and **the other neutrino entron is ultimately released from the Black Hole as a neutrino photon to help provide the gravity of the galaxy or the gravity of the universe.** **Contrary to popular belief about Black Holes, the energy radiated out of Black Holes (in a period of time) is in the form of neutrino photons and this energy corresponds approximately to the mass consumed by the Black Holes (in the same period of time).** This is going to be difficult for most people to believe, **since they have been falsely led to believe that “nothing, or almost nothing, escapes the Black Hole”. (Also, neutrino photon radiation is not Hawking radiation.)** There is no such thing as Hawking radiation. The mass difference between what goes into the Black Hole and what comes out of the Black Hole determines the rate of increase or decrease of the effective mass and accumulated energy of the Black Hole. However, since Black Holes are radiating neutrino photons at about the same rate that they are consuming protons, and since the mass/energy of the neutrino photon is approximately the same as the mass/energy of the proton, Black Holes can remain at approximately the same mass/energy for billions, maybe trillions of years. **This is conservation of mass-energy on a colossal scale!!!**

Readers should keep in mind that this description of Black Holes could be applicable to each galactic Black Hole and each Universe Black Hole; so, we could be thinking about millions, billions or trillions of Black Holes in the Cosmos. These Black Holes could be competing for galaxies and the galaxies could be competing for star systems.

Readers may wonder how all or almost all of smartest scientist in the world, since the time of Isaac Newton and Albert Einstein, could have been unaware of this enormous amount of radiation spreading out from Black Holes at the center of universes and from Black Holes at the center of each galaxy. **For example,** our Milky Way Black Hole in the center of our galaxy is able to direct the orbit of our entire solar system from the MW Black Hole’s position **26,000 light years (246 billion-billion meters) away from us.** Not only that, while our MW Black Hole is controlling the path of our solar system, **it is at the same time controlling the paths of all of at least another 100 to 400 billion (maybe more) star systems including their planets and moons) in our Milky Way Galaxy.** I explain below how this happens.

**In Chapter XX of my book, I estimate the effect of a consumption of mass equal to the mass of one earth-size planet per day by the Milky Way Black Hole.** Our earth has an estimated mass of about  $598 \times 10^{24}$  kg (598 trillion, trillion kilograms). Nearly all of that mass is provided by protons, each with a mass of about  $1.67 \times 10^{-27}$  kg; so, an earth-size planet contains ( $598 \times 10^{24}$  kg/ $1.67 \times 10^{-27}$  kg/proton) about  $3.6 \times 10^{51}$  protons. I explained above in the section entitled “Protons”, that nearly all the mass of each proton is provided by one neutrino entron, each with a mass of about  $1.65 \times 10^{-27}$  kg. A sphere, with a radius the size of the radius of the orbit of our Solar System (i.e., about  $2.46 \times 10^{20}$  meters, about 26,000 lightyears), would have a surface area of about  **$7.60 \times 10^{41}$  m<sup>2</sup>.** The surface area of a sphere is:  $A = 4\pi r^2$ . One day is equal to 86,400 seconds. So, assuming that a neutrino photon is released for each proton consumed, the

neutrino photon flux at the position of our Solar System in our Milky Way Galaxy, resulting from the consumption of one earth-size planet per day, would be:  $(3.6 \times 10^{51} \text{ np/day}) / [(0.864 \times 10^5 \text{ s/day}) \times (7.60 \times 10^{41} \text{ m}^2)] = \text{about } \underline{\underline{54,800 \text{ neutrino photons per square meter-second}}}$ . This corresponds to 5.48 neutrino photons per square centimeter-second. One square centimeter is about the size of my trigger-finger nail. This means, based on these rough assumptions, that about 5.48 neutrino photons are passing through my trigger-finger nail each second from the Black Hole 26,000 lightyears away in the center of the Milky Way Galaxy. (Please note that these numbers are somewhat smaller than the corresponding numbers in my 2014 book. In my book I assumed that our earth and our solar system was only about 23,000 light years from the Black Hole instead of my current estimate of 26,000 lightyears.)

That is also assuming I have my fingernail positioned perpendicular to the beam of neutrino photons from the Milky Way Black Hole that is illuminating our solar system, our earth and me from about 26 thousand lightyears (about  $2.46 \times 10^{20}$  meters) from the Black Hole's location in the constellation Sagittarius. I explain below in the section entitled "Second Hand Gravity" (on page 53) that the neutrino photons in the flux of neutrino photons from our Galactic Black Hole that illuminates the stars, planets and moons of our galaxy are accumulated in the stars, planets and moons. And the neutrino photons are later released from the stars, planets and moons to produce the gravity of the stars, planets and moons. Based on this assumption, I also show that the surface neutrino photon flux of this second-hand gravity is only one fourth of the flux of the neutrino photon gravity illuminating the stars, planets and large moons. So, if I, on the surface of the earth, position my trigger fingernail parallel to our earth's surface, about 1.37 (i.e.,  $5.48/4$ ) neutrino photons per second pass through my fingernail coming up from the earth. In my YouTube video my specific explanation of Black Holes and gravity begins at 1:30 and lasts about 10 minutes.

### BLACK HOLES

According to my Ross Model of the Cosmos, all of the gravity of the Cosmos is created by Black Holes. For people living on earth the most important Black Holes are our Milky Way Black Hole and our Universe Black Hole. These two Black Holes are described below:

#### Our Milky Way Black Hole

Our Milky Way Black Hole is located in the center of our Milky Way Galaxy about 26,000 light years (246 billion-billion meters) from our Solar System. Our astronomers can view the region of the Milky Way Black Hole in the southern sky near an edge of the constellation Sagittarius. Astronomers cannot see the Black Hole but they have recently tracked the paths of several stars elliptically orbiting the Black Hole very close to the MW Black Hole. The paths of six of the stars are shown in **FIG. 9** attached. These stars have names: S2, S14, S8, S14, S1 and S13. (Astronomers have also detected radio signals coming from the location of the Black Hole. Orbit periods of these six stars range from about 15 years for S2 to about 67 years. A result is that the star S2 makes about 1,733 orbits during the time required (26,000 years) for its light to reach our telescopes. (The orbit period of our sun and the rest of the Solar System around the Black Hole is much longer, at about 22 million years.) All orbits of stars and their planets around the Milky Way Black Hole are apparently elliptical. Astronomers have estimated that the orbit of one of the six stars comes within about  $6.75 \times 10^9$  km (375 light minutes) of the Black Hole at the center of our Milky Way Galaxy. Astronomers, based on existing gravitation theories, estimate that our Black Hole has a mass of **about 4.31 million solar masses**. The light our Astronomers monitor from these orbiting stars left the region of our Black Hole about 26,000 years ago. (I wonder, do these six stars still exist as of today?) Another

**bigger question is what is responsible for the Black Hole's enormous gravity. Is its enormous mass creating a curvature of the space surrounding the Black Hole? Or is there something else going on in the Black Hole that is producing the gravity holding our galaxy together? I suggest you read on!**

### **Our Universe Black Hole**

**I am not certain of the location of our Universe Black Hole. But I believe it is located at the center of the Shapley Super Cluster of Galaxies.** Astronomers tell us that our Milky Way Galaxy is currently located about **650 million lightyears away** from the Shapley Super Cluster and is receding from that location at a speed of about 13.358 million meters per second (about 4.6 percent of the speed of light), approximately consistent with a concept known as the **Hubble Flow**. My Model of our Cosmos proposes that the current speed of our Milky Way Galaxy is primarily the result of it being accelerated by the gravity of our Universes' Monster Black Hole for many billion years before passing, about 13.75 billion years ago, through the region of the MBH at the center of our Universe. I describe our Monster Black Hole and its surrounding Shapley Super Cluster in more detail beginning at **page 72**.

### **THE SIZES OF THINGS**

In this section, I try to estimate the sizes of the **neutrino photon**, the **Black Hole** at the center of our Milky Way Galaxy and the **Black Hole** at the center of our Universe.

#### **The Neutrino Photon - Size:**

As I have explained above (as shown in Table A (Continued)), the diameter of a neutrino photon is about  $0.8485 \times 10^{-15}$  meter (about  $0.8485 \times 10^{-13}$  cm) as determined by the circular path of its neutrino entron within the neutrino photon as shown in FIG. 3. The path of the neutrino photon's entron through space is shown in FIG. 4. The neutrino entron is traveling in a circle at a speed of  $2c$  as its tronnie travel in a circle at a speed of  $\pi c/2$  and while the neutrino photon travels forward at the speed of  $c$ , so the forward speed of its entron varies between minus  $c$  and plus  $3c$  as shown in FIG 4. The neutrino photon with its **diameter of about  $0.8485 \times 10^{-15}$  m** is comprised of single neutrino entron as explained above which has a **diameter of about  $0.9339 \times 10^{-18}$  m**, almost a thousand times smaller. In this section I want to make a good estimate of the size of Black Holes. Photons as shown by FIGS. 3 and 4 are two-dimensional since they are comprised of only two circling tronnie. The two tronnie are two point-particles leap-frogging each other and traveling in their circle at a speed of  $\pi c/2$ . So, the photons are not spherical; however, the orientation (i.e., the polarization) of each entron is probably random; so, I will represent photons in a flux of photons as tiny spheres, each with a diameter equal to the diameter of the entron's path in the photons' circles (i.e., about  $0.8485 \times 10^{-15}$  m). The radii of the sphere would be one-half the diameter, and in centimeters:  $0.42425 \times 10^{-13}$  cm. The estimated equivalent volume of each neutrino photon would be:

$$V = (4/3) \pi r^3 = \text{about } 0.32 \times 10^{-39} \text{ cm}^3$$

If we assume, like I do, that the neutrino photons exiting the Black Hole would not over-lap each other, we can estimate the maximum number of neutrino photons that would fit into one cubic centimeter of space. The density of the neutrino photons in the one-centimeter cube will be about  **$3.1 \times 10^{39}$  neutrino photons per cubic centimeter (i.e., the number of np's per cubic centimeter =  $1/0.32 \times 10^{-39} \text{ cm}^3 = 3.12 \times 10^{39} \text{ np/cm}^3$ )**. I will now use this estimate to estimate the size of the Black Hole at the center of the Milky Way Galaxy assuming that the Black Hole consumes one earth-size planet per day. The Black Hole at equilibrium must release one neutrino entron for each proton consumed.

### **The Milky Way Black Hole - Size:**

As explained above an earth-size planet comprises about  $3.6 \times 10^{51}$  protons and each proton comprises one neutrino entron. One day is equal to 86,400 seconds. And  $3.6 \times 10^{51}$  protons per day divided by  $(0.864 \times 10^5 \text{ seconds per day}) = 41.67 \times 10^{46}$  neutrino photons per second; so, the Black Hole at equilibrium must release about  $41.67 \times 10^{46}$  neutrino photons per second. Since each neutrino photon will apply a backward force on all charged particles (including the charges in other neutrino photons) occupying a space through which the neutrino photon is traveling, there is a limit to the number of neutrino photons that can pass through the space surrounding the Black Hole. My analogy is the bumper-to-bumper automobile traffic leaving a major city at the beginning of each work-day morning for their jobs in factories surrounding the city. To make this analogy complete, the effective size of the city would approximate a boundary where the bumper-to-bumper traffic becomes full-speed traffic. This is because each neutrino photon must stay far enough behind the neutrino photon that is located just ahead of itself so that the path of the two neutrino photons do not overlap. (I am assuming that neutrino photons do not overlap. If it turns out that they do, I will rewrite this section.) Neutrino photons travel at the speed of light ( $3 \times 10^{10} \text{ cm/s}$ ). I am assuming that each neutrino photon has a linear dimension of about  $0.85 \times 10^{-13} \text{ cm}$ . In the space surrounding the Black Hole each photon in order to escape will need a charge free cross-sectional space of about:

$$(0.85 \times 10^{-13} \text{ cm}) \times (0.85 \times 10^{-13} \text{ cm}) = 0.7225 \times 10^{-26} \text{ cm}^2$$

through which to pass. So, each second the number of neutrino photons passing (“bumper to bumper”) through a  $0.7225 \times 10^{-26} \text{ cm}^2$  section of the space surrounding the Black Hole would be  $(3 \times 10^{10} \text{ cm/s}) / 0.85 \times 10^{-13} \text{ cm} = 3.53 \times 10^{23}$  neutrino photons per second. But we have  $41.67 \times 10^{46}$  neutrino photons that need to escape each second, so we need a surface area of at least  $(41.67 \times 10^{46} \text{ np/s}) \times (0.7225 \times 10^{-26} \text{ cm}^2) = 30.1 \times 10^{20} \text{ cm}^2 = 30.1 \times 10^{16} \text{ m}^2$ . Since escaping neutrino photons are applying a tremendous backward gravitational force on all things trying to escape, the size of the Black Hole will be as small as possible. So (again based on these assumptions) this means that the surface area of the Milky Way Black Hole needs to be, as large as but not larger than, about  $30.1 \times 10^{16} \text{ m}^2$  (based on the above assumptions). The surface area A of a sphere is  $(4/3) \pi r^2$  so:  $A = 30.1 \times 10^{16} \text{ m}^2 = (4/3) \pi r^2 = 4.189 r^2$  so, our rough guess at the radius of the “sphere” would be:

$$r = \text{square root of } [30.1 \times 10^{16} \text{ m}^2 / 4.189] = \text{square root of } 7.185 \times 10^{16} \text{ square meters} \\ = 268 \text{ million meters.}$$

Notice that this estimated radius ( $268 \times 10^6 \text{ m}$ ) is much larger than the radius of our earth (about 6.3 million meters) but much less than half the radius of our sun which is about 695 million meters.

#### Milky Way Black Hole

Surface Area	$3 \times 10^{17} \text{ m}^2$
Radius	$2.7 \times 10^8 \text{ m}$
Diameter	$5.4 \times 10^8 \text{ m}$
Neutrino Photon Radiation Rate	$4.2 \times 10^{47} \text{ np/s}$

If the Black Hole consumes the equivalent of two earth-size planets per day, the surface area of the Black Hole will have to be twice as large. (As the surface area of a sphere doubles, the radius of the sphere increases by the square root of two (i.e., by about 1.414). This would require that the radius would be increased from  $2.68 \times 10^8$  meters to  $3.78 \times 10^8$  meters. So, I will take a guess that the radius of the Milky

Way Black Hole is between about  $2.68 \times 10^8$  meters and  $3.78 \times 10^8$  meters. Please note that this is just my guess. Readers should feel free to make their own estimate of the size of the Milky Way Black Hole. (In making your guess you may want to study FIG. 9 attached which shows star C2 orbiting our Milky Way Black hole at a minimum distance of  $6.75 \times 10^9$  km ( $6.75 \times 10^{12}$  m). So, we could conclude that the radius would be a lot less than  $6.75 \times 10^{12}$  meters. (As explained above my estimated radius is  $2.7 \times 10^8$  m.)

### **Our Universe Black Hole - Size:**

To estimate the size of our Universe Black Hole, I use the same technique as I did above to estimate the size of our Milky Way Black Hole. Therefore, I have taken a guess that the **Black Hole** in the center of our Universe **consumes** on the average **one sun-size star per earth-day**. A sun-size star has a mass of about  $1.59 \times 10^{30}$  kg. Almost all of that mass is provided by protons, each of which has a mass of about  $1.672 \times 10^{-27}$  kg. So, the sun-size star contains about  $(1.59 \times 10^{30} \text{ kg} / 1.672 \times 10^{-27} \text{ kg/proton}) = 0.95 \times 10^{52}$  protons. I have assumed that our Universe Black Hole releases neutrino photons at about the same rate that it consumes protons. This would mean that our Universe Black Hole releases neutrino photons at a rate of about  $0.95 \times 10^{57}$  neutrino photons per earth day. There are  $0.864 \times 10^5$  seconds per earth day; so, my estimate is that the Black Hole in the center of our Universe radiates away about  $(0.95 \times 10^{57} / 0.864 \times 10^5 \text{ s/day}) = 1.1 \times 10^{52}$  neutrino photons per second. **I will call it  $10^{52}$  np/s.** This is the number of neutrino photons per second that holds our Universe together!

As explained above for the Milky Way Black Hole, each neutrino photon needs a space of about  $0.7225 \times 10^{-26} \text{ cm}^2$  to escape from a Black Hole; so, a surface area of the Universe Black Hole needs to be about  $7.225 \times 10^{-26} \text{ cm}^2$  per neutrino photon for each of  $10^{52}$  neutrino photons. So, a total surface area of about  **$7 \times 10^{26} \text{ cm}^2$  or  $7 \times 10^{22} \text{ m}^2$**  is needed for **our Universe Black Hole**. (This compares to the surface area of  **$30.1 \times 10^{16} \text{ m}^2$  for the Milky Way Black Hole.**) As above, the surface area of a sphere is  $A = (4/3)\pi r^2$ , so the radius of our Universe Black Hole is estimated to be:  $r = \text{square root of } = 7 \times 10^{22} / (4/3)\pi$  square meters (i.e. square root of  $1.67 \times 10^{22} \text{ m}^2$ ). So, my estimate of the **radius of our Universe Black Hole** is roughly about  **$1.3 \times 10^{11} \text{ m}$** , which is large (but only a very small fraction of a lightyear and only about three orders of magnitude larger than my estimated radius ( $2.7 \times 10^8$  m) of the Milky Way Black Hole. And most importantly, the estimated radius of the Black Hole in the center of our Universe is almost **a trillion times smaller than the diameter of a typical galaxy** such as our Milky Way Galaxy. The radius of our Universe Black Hole is comparable to the Earth's orbit around the sun at  $1.50 \times 10^{11}$  meters. The Milky Way diameter is about  $1 \times 10^{23}$  m. This ratio is going to become very important when we consider in the next section what happens when a galaxy is falling toward the Monster Black Hole in the center of our Universe. Keep in mind that our Universe Black Hole is controlling the paths of at least about 100 to 400 billion galaxies in our Universe (which is also its Universe).

### **Neutrino Photon Flux at Our Solar System**

Everything in our Solar System including our sun, our earth, our moon and our people (including you the reader and me) are being irradiated by neutrino photons flux from our Universe Black Hole and our Milky Way Black Hole. That flux is summarized in the following table. Later on, I will discuss neutrino photon flux in terms of Primary and Secondary Gravity.

## Neutrino Photon Flux at our Solar System from Our Universe BH and our Milky Way BH

	Our Universe Black Hole	Milky Way Black Hole
Surface Area at our Solar System	$7 \times 10^{32} \text{ m}^2$	$3 \times 10^{17} \text{ m}^2$
Radial Distance from BH to Solar Sys.	$650 \times 10^6 \text{ lightyears}$	$26 \times 10^3 \text{ lightyears}$
Neutrino Photon Radiation Rate	$1 \times 10^{52} \text{ np/s}$	$4.2 \times 10^{47} \text{ np/s}$
Neutrino Photon Flux at Our Solar System	$23 \text{ np/m}^2\text{s}$	$54,800 \text{ np/m}^2$

### HOW THE COSMOS WORKS

#### Existing Theories

Existing theories, that I hope to replace with my **John Ross Model of the Cosmos**, propose that “the universe” began with a “Big Bang” about 13.75 billion years ago in which a **singularity** suddenly became an extremely hot dense mass which then expanded much faster than the speed of light through a variety of phases within a few seconds or minutes to a size corresponding to a significant fraction of the size of our present Universe. After that, atoms and molecules formed, and later stars, planets and galaxies formed, and now space is expanding so all far-away galaxies seem to be expanding away from each other. I won’t bother trying to explain the details of this **ridiculous explanation**. The story in Genesis makes more sense. I believe I have a much better explanation of how we got to where we are.

#### Our Universe and the Cosmos

To begin with, as I have explained above, I want to distinguish again between “our Universe” and “other universes” and between universes and the “Cosmos”. I define the “Cosmos” as everything that currently exists, has existed in the past since the beginning of time and will exist in the future forever. According to my model, there are a large number of universes in the Cosmos. I describe “our Universe” a little differently than I described it in my book. I now describe **our Universe** as that group of galaxies and galaxy clusters that are under the gravitational control of a single Monster Black Hole at the center of our Universe. There are at least a few hundred billion galaxies in our Universe. All galaxies that are not under the gravitational control of our MBH are not a part of our Universe, but these galaxies are probably parts of other universes. I have no knowledge of the number of universes in the Cosmos but by my definition of the Cosmos, there is only one Cosmos. I suppose there may be galaxies that are not part of any universe, but I doubt it. And there may be galaxies that are in limbo, being controlled by Monster Black Holes of two or more universes, at least temporally. **FIGS. 11 and 12** are sketches showing the position of my proposed Monster Black Hole at the center of **our Universe** and a set of speed-of-light neutrino photon gravitational waves being continuously produced by our MBH. The neutrino photon gravitational waves extend out from the MBH at the speed of light to distances of more than fifty billion lightyears. (**My FIG. 11** sketch showing gravity waves extending more than 50 billion lightyears is based on a generally recognized belief by our astronomers that **our observable universe** extends with a diameter of about 100 billion lightyears.) So, I assume our Universe is roughly spherical with a diameter of about 100 billion lightyears. Readers need to recognize that our Milky Way Galaxy is currently located only about 0.65 billion lightyears from the center of our Universe. (Remember I have defined “our Universe” as those galaxies gravitationally controlled by the Monster Black Hole **at the center of our Universe**.) Five 200 million lightyear waves are identified on the **FIG. 11** drawing but the waves from the MBH continue endlessly but decreasing in energy by the square of distance traveled. (Also, readers should keep in mind that my “neutrino photon gravitational waves” are not really waves but are really neutrino photons, each

traveling at a speed of  $c$  and, together, representing decreasing fluxes [ $\text{np}/\text{sm}^2$ ] of neutrino photons.) As I have described above, I estimate the size of our MBH as having a radius of about  $1.29 \times 10^{11}$  meters (a little less than 100 times larger than the diameter of our sun); so, the MBH is just a tiny dot on the **FIG. 11** sketch. My proposed MBH releases about  $10^{52}$  neutrino photons per second to produce the gravity that holds our Universe together. As explained above this flux of neutrino photons per second is based on my guess that the MBH consumes the equivalent of one sun-size star per day. (Keep in mind that the wavelength of neutrino photons is only about  $1.335 \times 10^{-15}$  m. Each one-second-thick section of each gravity wave would contain about  $10^{52}$  neutrino photons and is about 300 million meters thick. I show them extending for more than fifty billion years at the speed of light to cover a spherical volume with a diameter of more than 100 billion lightyears. So, FIG. 11 shows the MBH gravity waves for the central 100-billion lightyear portion of our Universe. Our Universe may be much larger or possibly somewhat smaller. I believe this central portion includes most of the visible matter in our currently “observable” universe. I believe our large telescopes do detect light from other universes, but as far as I know no galaxies from other universes have been specifically identified. This is probably due to the fact that the speed and direction of galaxies in these galaxies outside of our Universe would not be correlated to the speed and directions of the galaxies of our Universe and would be very difficult to track. In this regard, I discuss far away filaments later in this paper.

### **My Prior Big Bang Explanation**

Monster Black Holes, the Big Bang, universe inflation and the next Big Bang are all discussed in **Chapter XXV – “Life and Death of Universes”** of my 2014 book **Tronnies – The Source of the Coulomb Force**. I tried to explained in my 2014 book that our Universe is a product of a long series of universes over a period of many trillion years, each of these universes had been born in a **Big Bang** explosion in which the Monster Black Hole at the center of its predecessor universe was destroyed by galaxies in-coming at speeds faster than the speed of light. **In an attempt to support the Big Bang Theory, I suggested in my book that after the destruction of the MBH of a predecessor universe in the Big Bang, the galaxies that had not yet arrived at the MBH continued their paths toward the region where the MBH had been. And they passed through the region of the MBH at a great variety of speeds such as about 1,000 m/s up to many times the speed of light, then expanded out in all directions to produce the inflation of our Universe.** I proposed that each successor universe developed a new Monster Black Hole that ultimately consumed much of the successor universe but ultimately suffered a similar fate from in-coming galaxies after a lifetime of about 100 billion years of expansion and contraction. **All of this was to try to preserve the concept of a Big Bang that would be the beginning of our Universe 13.75 billion years ago. I have now determined that there was no Big Bang about 13.75 billion years ago, that represents the birth of our Universe. Sorry, Sheldon.**

### **The Big Bang Theory is Just a Theory, an Incorrect Theory.**

I have recently concluded that the Monster Black Hole at the center of our Universe was not destroyed or created in a Big Bang Event about 13.75 billion years ago or at any other time. **My current belief is that there was no Big Bang event. Therefore, I believe that the “Big Bang Theory” is just a theory and it is an incorrect theory.** As I have explained above, I have recently recognized that the Monster Black Hole at the center of our Universe is probably much more than a billion times smaller than our Milky Way Galaxy, maybe more than a trillion times smaller. My estimate of the diameter of the MBH is about  $2.6 \times 10^{11}$  meters. This is an insignificant size compared to the diameter of our Milky Way Galaxy at about  $10^{23}$

meters. (This size of the MBH is about 180 times larger than our sun and about 20,000 times larger than our earth.) However, according to my current model, the MBH (with some help from all of the Galactic Black Holes in the Shapley Supercluster) produces a gravitational attraction extending for more than fifty billion lightyears and defining our Universe. Galaxies within the gravitational control of our Universe MBH would be attracted for billions of years and portions of most of the galaxies that pass close to the location of the MBH would arrive at the vicinity of the Monster Black Hole with speeds up to many times the speed of light. I have now decided that it is unlikely that a substantial portion of any galaxy would be consumed by the Monster Black Hole or that the MBH would be substantially affected by any incoming galaxy. However, some very small portions of each galaxy passing through the region of the MBH would be consumed by the MBH, and those portions would be converted into gravity carrying neutrino entrons and neutrino photons.

### **The Passage of our MWG**

This is what probably happened about 13.75 billion years ago when our Milky Way Galaxy arrived at the vicinity of our Universe MBH: **Most of our Milky Way Galaxy merely passed right through the vicinity of the Monster Black Hole and continued in its incoming direction with no significant loss of momentum.** Most likely, only a few stars and their planets and moons would have been consumed by the MBH when our MWG made its pass-through the region of the MBH. The rest of the 100 billion to 400 billion (or more) star-systems of our Milky Way Galaxy would have sailed right through the region of the MBH with about the same speed it had when it arrived at the region.

Here is the situation: Astronomers tell us that our Milky Way Galaxy is part of a “Local Group” of galaxies which is part of a cluster of galaxies that in turn is part of a larger super cluster of galaxies and that all of these galaxies are currently receding from a region of space that includes the Shapley Super Cluster (SSC) of galaxies which is reported to have a mass of about **50 million billion** solar masses (**equal to about 80 X 10<sup>45</sup> kg**). The recession speed is currently about 14 million m/s. But our local group is also being slowed down at the rate of about 0.6 million m/s by a force coming from the same direction. Our local group is spread out over a distance about 10 million lightyears. A particular cluster of galaxies called the “A3558 cluster” in the Shapley Super Cluster is also spread out over about 10 million lightyears. Our Local Group contains at least 8 Black Holes and eight galaxies. I understand and believe that the A3558 cluster of the Shapley Super Cluster contains more than 135 Black Holes (probably one in each of its more than 135 galaxies.) The A3558 cluster also contains a galaxy called the “ESO444-46 galaxy” which reportedly has a diameter larger than 340,000 light years (about  $3.4 \times 10^{21}$  meters). I believe our Universe Black Hole may be located at the center of this galaxy.) Each of the Black Holes in our Local Group and each of the Black Holes in the A3558 cluster are probably surrounded by up to many billion stars, planets and moons. If portions of our Local Group were traveling at an average speed of about 15 times the speed of light, the time for them to pass through the ESO444-46 galaxy would be about 2 ½ earth-years, but the time for the Black Hole at the center of the Milky Way galaxy to pass by the **MBH** with a diameter of only  $2.58 \times 10^{11}$  m would be only about one hour. The time for portions of the celestial objects of the Milky Way at an average speed of 15 c ( $45 \times 10^8$  m/s) to pass through the entire Shapley Super Cluster with a diameter of 10 million lightyears (about  $10^{23}$  meters) could be almost a million years. Each of the galaxies of the Local Group would gain speed as it starts through the super cluster and would lose an equal amount of speed on its way out of the super cluster. After completely clearing the Shapley Super Cluster, the celestial objects in our Local Group should have about the same average speed and momentum coming out as it had coming in. In this example we are assuming its incoming speed of the stars, planets and moons



passing close to the MBH was 15 times the speed of light (15c); so, their leaving speeds would also be about 15c. **(The stars planets and moons that are consumed, obviously, would not have a leaving speed.)** However; once past the MBH the speeds of about 15c are rapidly decreased by the gravity of the MBH (and other gravitational sources in the SSC). Parts of the MWG that pass through the region of the MBH very far from the location of the MBH would have passing speeds closer to 14 million meters per second. So, after 13.75 billion earth years following passage through the region of the MBH, **our MWG is now located about 650 million lightyears from the MBH** and the pull of gravity from the MBH has reduced the speed of our MWG (a little bit each second) from a wide range of speeds up to several times the speed of light to its current average speed of about 13.358 million meters per second. This is my estimate of the net speed at which our Local Group is currently receding from the SSC at a distance of 650 million lightyears from the SSC. [Note: I provide additional thoughts regarding the passage of our MWG later in this paper beginning on Page 88 in a section entitled: **“When our MWG Transited the Region of our MBH”**].

### **LINEAR PASS-THROUGH GALACTIC ORBITS**

According to my model as explained above, our Universe and our Milky Way Galaxy are much older than 13.75 billion years. According to my model the age of our Universe is probably many trillion earth years and our Cosmos has to be much older than our Universe. I have defined “our Universe” as that group of galaxies and galaxy clusters that are under the gravitational control of a Monster Black Hole at the center of our Universe. I believe all of the galaxies that our astronomers have been able to image in detail are under the control of the Monster Black Hole that is in the center of our Universe. Galaxies that are not under the control of our Universe’s Monster Black Hole (based on my definition of our Universe) are not a part of our Universe. Some of the orbits are elliptical but most of the orbits of the galaxies in our Universe are “linear pass-through galactic orbits”. As far as I know, these types of orbits are currently unknown to science. In fact, the most important features of these types of orbits were also unknown to me until a few months before I am now (Fall 2021) writing this paragraph.

According to this current version of my model of our Universe, as I have explained, the Monster Black Hole at the center of our Universe has a diameter of about  $2.6 \times 10^{11}$  meters (less than 200 times the diameter of our sun); whereas a typical galaxy (such as our Milky Way Galaxy) has a diameter of about  $10^{23}$  meters, almost a trillion times larger. Yet the MBH at the center of our Universe is in gravitational control of all of the 100 to 400 billion (or more) of galaxies of our Universe.

On **page 59 below**, I have compared Isaac Newton gravity to Ross Model gravity. To do so, I compared my estimate of the neutrino photon flux from our sun on our earth and our earth on our sun (both of which are about:  $3.79 \times 10^{13}$  np/s-m) to the gravitational force from our sun on our earth and from our earth on our sun utilizing Isaac Newton’s equation of force based on the masses of the earth and our sun and Newton’s gravitational constant (both of which are  $28.35 \times 10^{21}$  newtons). The result is:

$$\mathbf{1.0 \text{ np/m}^2\text{-s} = 7.5 \times 10^8 \text{ newtons.}}$$

Readers, please feel free to check my calculations.

The concept here is that for each square meter cross section of our MWG cross-section of our milky way galaxy, our galaxy will receive gravity from our the MBH in the center of our Universe about  $7.5 \times 10^8$  newtons of gravitational force.

So, now all we need is an estimate of the cross section of the Milky Way galaxy. To get a ball park number for the cross section of our galaxy, I use published estimates that there are about 100 to 400 billion solar systems in the Milky Way Galaxy made up mostly of stars, planets and moons. For my estimate of the cross section of the galaxy, I assume that the cross section is about equivalent to the cross section of 400 billion stars with average cross section equal to the cross section of our sun which has a radius of about:  $r = 0.695 \times 10^9 \text{ m}$  and a cross section,  $\pi r^2$ , of about  $1.5 \times 10^{18} \text{ m}^2$ . So, my rough estimate of the cross section of our Milky Way Galaxy is  $(400 \times 10^9 \text{ stars}) \times (1.5 \times 10^{18} \text{ m}^2/\text{star}) = 600 \times 10^{27} \text{ m}^2$ .

So, my estimate of the gravitational force provided by the Monster Black Hole at the center of our Universe on our Milky way Galaxy if the galaxy were located 50 billion lightyears from the center of our Universe (where the flux would be about  $0.034 \text{ np/sm}^2$ ) is:

$$\mathbf{F = (0.034 \text{ np/s-m}^2) \times (600 \times 10^{27} \text{ m}^2) = \text{about } 20.4 \times 10^{27} \text{ np/s}}$$

$$\mathbf{F = (20.4 \times 10^{27} \text{ np/s}) \times ((7.5 \times 10^8 \text{ N})/\text{np/s}) = 1.53 \times 10^{27} \text{ N} = 1.53 \times 10^{37} \text{ kg-m/s}^2}$$

So, when our Milky Way galaxy was in the past located about 50 billion lightyears on the other side of the center of our Universe and was at that time making its turn-around to head back toward the region of our Monster Black Hole at the center of our Universe, the **MBH** was applying a force on our MWG of about: **1.5 trillion-trillion-trillion newtons equivalent to about  $1.5 \times 10^{37} \text{ kg-m/s}^2$  !!!**

However, the mass of our Milky Way Galaxy is huge, about  $2 \times 10^{42} \text{ kg}$ . So, the acceleration “a” of the MWG at that time was only:

$$\mathbf{a = F/m = 1.5 \times 10^{37} \text{ N} / 2 \times 10^{42} \text{ kg} = 1.5 \times 10^{37} \text{ kg-m/s}^2 / 2 \times 10^{42} \text{ kg} = \text{about } 0.75 \times 10^{-5} \text{ m/s}^2}$$

An acceleration of  $0.75 \times 10^{-5} \text{ m/s}^2$  is a very small acceleration. But after the “turn-around” the velocity of our MWG is increased each second until the center of our MWG passed through the region of the MBH. At the present time, about 13.75 billion years **after passing the region of the MBH**, our MWG is currently located about 650 million lightyears from the MBH and is moving directly away from Shapley and the MBH at a speed of almost 14 million meters per second according to the Hubble flow as shown in FIG.12; but our galaxy is slowing down at a rate of about 0.6 million meters per second, for a net recession speed relative to and away from Shapley of about 13.4 million meters per second. So, what’s going to happen to our MWG? We recognize that the momentum of our galaxy (mass times velocity) is not going to increase since there is apparently no significant force currently pulling our galaxy away from Shapley and there is a gravitational force from Shapley and the MBH within it slowing down our MWG at the current rate of about 0.6 million meters per second. But we are taught that gravity decreases with the square of distance; so maybe the decreasing Shapley gravity will be insufficient to stop the Hubble flow recession from Shapley. However, we should be OK because although the gravity from Shapley decreases with distance, but it never decreases to zero; so, I believe it is only a matter of time before our MWG reaches the “turn-around” and heads back toward Shapley. The nice thing about all of this is that our return to Shapley will take a very long time! I have estimated the Milky Way distance from Shapley to turn around to be 50 billion lightyears (50 lightyears out and 50 lightyears back) and to keep things simple, I have estimated the average speed for our MWG for the whole 100 billion light year trip to be about one half of what it is now. Right now, our MWG is receding at about 14 million meters per second. One half of that speed is about 7 million meters per second. The trip from Shapley to turn around and back is 100 billion lightyears ( $10^{11}$  lightyears). A lightyear is about  $9.46 \times 10^{15}$  meters; so, the trip is about  $9.46 \times 10^{26}$  meters.

So, to travel from Shapley to turn around and back to Shapley would take  $9.46 \times 10^{26}$  meters /  $7 \times 10^6$  meters/second which is about  $1.35 \times 10^{20}$  seconds. There are  $3.154 \times 10^7$  seconds in a year; so, the trip to turn around and back will take about  $0.43 \times 10^{13}$  earth years, **a little more than 4 trillion years**. So, according to these calculations, it will be a long-long time before any portion of our galaxy gets consumed by the MBH in the center of our Universe. But this is only one half of a complete cycle. The estimated time for a complete 200 billion lightyear cycle would be a little more than **8 trillion earth years**.

Pardon the math of the preceding paragraph. For readers who don't like math I will explain with words. I have described the path of our MWG from an edge of our Universe, falling under MBH gravity for a distance of 50-billion lightyears (picking up speed each second along the way) then passing through the region of the MBH at an enormous speed; then slowing down over a distance of another 50-billion lightyears to zero speed at the opposite edge of our Universe 100-billion lightyears distant. Then our Milky Way Galaxy is falling back to the region of the MBH through a distance of another 50-billion lightyears, picking up speed every second along the way and then passing back through the region of the MBH at about the same speed as the previous passage but in the opposite direction; then slowing down over a distance of 50-billion lightyears to zero speed at the same edge of our Universe where our Milky Way Galaxy started this 200-billion lightyear cycle. The time for the complete cycle is about **8 trillion earth years**.

I believe that the above description of our Milky Way Galaxy and our Universe and the Cosmos is not consistent of any existing description, especially descriptions that propose our Universe began with a Big Bang about 13.75 billion years ago. So, I will try to take a few minutes of readers time to make a few points in support of my theory. First, I would like to point out that if this description is correct for our galaxy, it is probably correct for many or most the billions of galaxies of our Universe. This would result in a size (diameter) of our Universe of about 100 billion lightyears (which I believe is consistent with existing evidence). All of the protons destroyed by the MBH are replaced by an equal number of neutrino photons. The neutrino photons provide the gravity that controls our Universe. After providing this gravity, the neutrino photon will ultimately combine with an electron to form a high-energy electron which will capture two positrons to form a new proton that will replace the proton that was destroyed to make the original neutrino photon. **(This analysis supports a steady-state galaxy and a steady-state Universe.** My description is also consistent with experimental data that incorrectly indicates that our Universe is expanding when we have no good reason to believe that it is expanding.) Under my model the hundreds of billions of galaxies in our Universe are merely passing back and forth through the region of the MBH in the center of our Universe. According to my model the MBH merely collects a little toll from each galaxy as the galaxy passes through the region of the MBH and the MBH utilizes the tolls to provide most of the neutrino photon gravity needed to operate our Universe and to replace the most of the hydrogen needed to provide the energy of our Universe. My model also supports concepts of a steady state universe and a steady state Cosmos; so, we don't have to worry about infinities. If a galaxy of one of my universes tries to expand beyond the edge of its universe there is a good chance that one of the MBHs of a surrounding universe will adopt the galaxy. The galaxy would thereafter would become a part of the surrounding galaxy.

**My description of linear-pass-through orbits of galaxies orbiting Monster Black Holes and defining universes is a fourteenth reason why I should be awarded the Nobel Prize in Physics.**

## PRIMARY AND SECOND-HAND GRAVITY

### Milky Way Primary Gravity

As explained above, based on my assumption that our Milky Way Black Hole consumes matter at the rate of one earth-size planet per earth-day, the neutrino photon flux (from the Black Hole) which I estimate at  $3.6 \times 10^{51}$  neutrino photons per day spread over  $7.6 \times 10^{41} \text{ m}^2$ , is roughly 54,800 neutrino photons per square meter-second at our Solar System which currently is about  $2.46 \times 10^{20}$  meters (about 26 thousand lightyears) from the Milky Way Black Hole.

The reverse Coulomb force results from the fact that neutrino photons (like all photons) travel forward at the speed of light while its entron travels in circles at a speed of  $2c$  (relative to the photon). The entrons are travelling forward at speeds ranging from **minus  $c$  to plus three  $c$**  each cycle of the photon (relative to the space the photon is traveling through). **The result is that the Coulomb forces from the neutrino entrons are most effective, on the things the neutrino photons are passing through, when the entron is traveling at approximately the same speed and direction as its Coulomb forces. This happens only during the portion of each cycle when the entron is traveling backward at speeds of minus  $c$  (and close to but less than minus  $c$ ).** As shown in FIG. 4 (attached) from my book, the entron is traveling at speeds of minus  $c$  and close to minus  $c$ , only at the bottom of the entron's path as shown the FIG. 4. That is why the neutrino photons provide a gravitational force on things they are passing through which force is directed backward toward the source of the neutrino photons. **Gravity, according to my model, is as simple (and as complicated) as that!**

(Readers may want to compare my gravity waves from Black Holes with water waves in the oceans. Water molecules in water waves also travel in circles at speeds greater than speed of the waves. The wavelengths of the water waves are enormously longer at about 10 to 20 feet whereas the wavelength of gravity waves is only about  $1.335 \times 10^{-15}$  meter.)

It is truly amazing that our Milky Way Black Hole, 246 million-billion meters (26 thousand lightyears) away from us, is producing the gravity that is controlling the path of our entire Solar System and, at the same time, is providing the gravity that is holding our entire galaxy together. But the work of the Black Hole is not cheap; each day the energy expended by our Black Hole in the center of our Milky Way Galaxy, based on my estimates, is equal to about  $53.82 \times 10^{40}$  joules (**about 53.8 thousand, trillion, trillion, trillion joules**) per earth-day. **This is a wonderful example of mass being completely converted into energy!!!** And the work of the Black Hole is about 100 percent efficient. This is the total energy corresponding to the mass of one earth-size planet consumed per earth-day. The next day a similar amount of mass is converted into a similar amount of energy. **Clearly, it takes a lot of energy to operate a galaxy!** On the other-hand we should recognize that not only is our Black Hole controlling the path of our Solar System, it is also, with the same expenditure of energy, controlling the paths of the 100 to 400 billion (or more) other star systems in our Milky Way Galaxy. **Let's just hope that a long, long time passes before our earth is needed as fuel to help keep our galaxy together.**

**We might compare this energy of  $53.82 \times 10^{40}$  joules per day to the most powerful hydrogen bomb ever exploded on earth, which was a measly  $4.48 \times 10^9$  joules. In H-bombs only about 0.712 percent of the bomb mass is converted into energy. Black Holes are almost 100 percent efficient, and, thankfully, their energy (unlike the energy of the H-Bomb) is put to good purposes.**

## **Second Hand Gravity**

In the preceding section I have described how Milky Way gravity is created and distributed by our MW Black Hole through the Black Hole's regular consumption of portions of our galaxy to release neutrino entrons as neutrino photons. Now we can easily show how other celestial bodies, within our galaxy, obtain and dispense their gravity, second and third hand. The penetration power of photons (from radio wave photons to gamma ray photons) is very well known and depends mostly on the wavelength (and corresponding energy) of the photons and the material being penetrated. For example, visible light photons can penetrate deep into the ocean, but not to its deepest bottoms. Visible light penetrates the cornea and lens of our eyes but gets absorbed in our retina. Visible light generally reflects from our skin, but infrared and ultraviolet light can penetrate short distances into our skin. Radio wave photons penetrate some walls of buildings. Gamma-ray and X-ray photons can penetrate completely through our bodies, but some x-rays are absorbed in our bones. Gamma ray photons penetrate short distances into metals. Neutrino photons have an energy of about 928 MeV; that is almost a thousand times the energy of a typical gamma ray photon (such as a 1.02 MeV photon) and almost a 0.5 billion times the energy of visible light photons (2.29 eV for the green light photon). Except for tronnies (that probably have no size at all), neutrino entrons are the smallest things in the Cosmos with diameters of about  $0.9339 \times 10^{-18}$  m (a little less than a billionth of a billionth of a meter). I don't know their penetrating power. I used to think that many of the neutrino entrons could completely penetrate stars, planets and moons. But now I believe that most of the neutrino photons that illuminate stars, planets and large moons penetrate very deeply into the stars, planets and large moons, but most of them or almost all of them do not completely pass all the way through stars, planets and large moons. Instead, I propose that the neutrino photons interact rarely with electrons and positron; but when they do, they cause the electrons and positrons to travel in circles (the size of the neutrino entron) until the neutrino entron is released in random directions. Thus, the neutrino photon will remain in the celestial body for substantial periods of time (perhaps many months or years). In between interactions with electrons and positrons, the neutrino photons travel in random directions as neutrino photons along successive mean-free paths probably averaging (I believe) several million meters in length. I am assuming that all neutrino photons that illuminate a star, planet or moon are ultimately released from the star, planet or moon. **I have taken a wild guess and I have estimated that the average mean-free path length of neutrino photons in celestial bodies is smaller than the diameter of our earth and larger than the diameter of our moon, my guess is an average distance of about 7 million meters ( $7 \times 10^6$  m).** The diameters of our sun, our earth and our moon are respectively about:  $1,392 \times 10^6$  m,  $12.8 \times 10^6$  m and  $3.5 \times 10^6$  m. This would mean that almost none to them would entirely penetrate our sun but a few may completely penetrate our earth, about half would penetrate our moon. So, about half of the neutrino photons illuminating our moon would be accumulated and later released from the moon. Most of the Black Hole neutrino entrons would penetrate most asteroids, small moons and man-made satellites. As I have previously explained, neutrino photons, once created, exists forever and cannot be completely destroyed. (Some will disappear temporarily, [split in half] during pair production, but those that participate in pair production are quickly recreated in an electron-positron annihilation. Also, neutrino entrons can be absorbed by electrons or positrons in the process of making a proton and an anti-proton, but this process does not reduce the number of neutrino entrons.) So, all or almost all of the neutrino photons that illuminate stars, planets and large moons are, sooner or later, released from the surface of these bodies as neutrino photons when one of their very many successive  $7 \times 10^6$  m mean-free paths take them through the surface of the stars, planets and moons.

Following this logic, neutrino entrons will accumulate in these bodies until these bodies are full to the extent that the neutrino photons escaping equal or approximately equal the number accumulating in the body. As explained above my model is assuming that, currently, the flux of neutrino photons illuminating our sun, our earth and our moon from our Milky Way Black Hole is 54,800 neutrino photons per square meter per second ( $\text{np}/\text{m}^2\text{s}$ ). It also assumes that the neutrino photon flux released **from the surfaces** of these approximately spherical bodies at equilibrium is about one fourth the number of neutrino photons/ $\text{m}^2\text{s}$  illuminating the body for our sun and our earth and about half for our moon. This, as explained above, is because the cross section of a spherical body is  $\pi r^2$  and the surface area of a sphere is  $4 \pi r^2$ , and celestial bodies are typically approximately spherical.

So, based on this logic, the surface flux of Black Hole supplied neutrino photons leaving our sun and our earth is about the same at about  $13,700 \text{ np}/\text{m}^2\text{s}$  (i.e.,  $54,800 \text{ np}/\text{m}^2\text{s}$  divided by 4 equals  $13,700 \text{ np}/\text{m}^2\text{s}$ ). My guess for the surface flux at the moon would be about  $6,850 \text{ np}/\text{m}^2\text{s}$ , because I am assuming that about half of the neutrino photons illuminating the moon pass through the moon on their first mean-free path without accumulating in the moon. The rest would accumulate in the moon and be released relatively uniformly through the moon's surface. Note that these numbers are large and extremely large, but the total mass of captured neutrino entrons is extremely small. As shown in Table 5 of my book, the mass of a single neutrino entron is only about  $1.65 \times 10^{-27} \text{ kg}$  (a little less than the mass of a proton). The reader should note that neutrino entrons: (1) are about one-half the size of electrons, (2) are resonant with electrons and positrons, (3) can be captured by an electron or a positron, (4) temporally become part of the electron or the positron; (5) then the neutrino entrons are quickly released in random directions for another 7 million-meter mean free path. This process repeats inside the celestial bodies for each captured neutrino photon until the neutrino photon passes through the surface of the bodies to help provide the gravity of the celestial body. The process will be at equilibrium when the neutrino photons released by the celestial body equals the number captured by the celestial body. I have estimated that our sun and our earth capture  $54,800 \text{ np}/\text{m}^2\text{s}$  from the Black Hole at the center of our Milky Way galaxy for each square meter of their cross-sectional area (defined by  $\pi r^2$ ). The surface areas and cross-sectional areas of these approximately spherical bodies are defined by  $r$ , where  $r$  for each body is the same  $r$  for both the cross-section area ( $\pi r^2$ ) and the surface area ( $4 \pi r^2$ ); so, equilibrium will be when the neutrino photons are radiating out from the surfaces at a rate of  $13,700 \text{ np}/\text{m}^2\text{s}$  (i.e.,  $54,800 \text{ np}/\text{m}^2\text{s}$  divided by 4).

I suspect that a typical neutrino entron trapped in a star, planet or large moon may undergo thousands to many trillions of these interactions with electrons or positrons before escaping a star, planet or large moon. Remember, my model proposes that a neutrino photon cannot be **completely** destroyed once created, so any neutrino entron trapped in a star, planet or moon will ultimately (sooner or later) escape from the surface of the star, planet or large moon. When it does, it along with all of the other escaping neutrino photons will provide the gravity of the star, planet or large moon.

### **Path of the Neutrino Photons in Stars, Planets and Moons**

For an example, it may be good to try to imagine in more detail a path of a neutrino photon from the Black Hole in the center of our galaxy as it travels to and into a celestial body such as our earth. As I have explained, a neutrino entron has a size of a little less than  $10^{-18}$  meter (smaller than a billionth of a billionth of a meter). It is circling at a speed of  $2c$  in a circle within the neutrino photon with a diameter 911 times larger than the diameter of the neutrino entron, but still awfully small at about  $8.485 \times 10^{-16}$  meter (as some of you may have realized, I often round off this dimension to  $0.85 \times 10^{-15}$  meter), and its photon is

traveling forward at the speed of light. The diameter of the neutrino photon is smaller than one thousandth of a trillionth of a meter. (This is one good reason why we do not feel them passing through our bodies.) When viewed from the perspective of the neutrino entron, solid matter such as the matter making up our earth or our bodies is almost completely empty space. Atoms have dimensions of about  $10^{-10}$  meter and the centers of the atoms (the nuclei) are spaced from other nuclei by about  $10^{-10}$  meter, and the nuclei have sizes at about  $10^{-15}$  meter (but atomic nuclei are not solid but are comprised of up to 59 alpha particles up to 3 protons and up to 27 electrons. Alpha particles are comprised of 4 protons and 2 electrons; the protons are in turn comprised of much smaller electrons, positrons and high-energy entrons) and their orbiting electrons have sizes of about twice that of the neutrino entrons at less than  $2 \times 10^{-18}$  m. So, there is plenty of empty space within stars, planets and moons and even atoms for the tiny neutrino entrons to pass through. In **Chapter XXII** of my book, I calculate the percentage of empty space in an 8 cubic-cm cube of copper metal, assuming that the nuclei and the electrons in the copper cube were solid spheres. My calculation shows that the cube of copper would be about **99.9999999999985 percent empty space**. So, it may be reasonable to expect that a typical neutrino entron on the average would travel through our earth for about 7 million meters before its first interaction with any matter. This interaction typically would be with an electron or a positron. This is because the neutrino entrons are resonant with only electrons and positrons.

Neutrino entrons are one-half the size of electrons and positrons and spin with the exact same frequency as an electron or positron. At these interactions the neutrino entron almost always becomes bound to the electron or positron for an extremely short period of time, with the neutrino entron circling through the center of the electron or positron. The Coulomb forces of the two tronniees in the neutrino entron drive the electron or positron in a circle at a speed of  $\pi c/2$  with a diameter of about  $0.8485 \times 10^{-15}$  m (similarly to the process that takes place in the formation of protons or anti-protons. If a proton or anti-proton is not created, (which is almost always the case) the neutrino entron quickly breaks off from the electron or the positron and proceeds in a random direction as a neutrino photon for another estimated mean-free path of about 7 million meters. This process continues for hundreds to millions or trillions (or more) mean free paths until one of these paths takes the neutrino photon through the surface of the celestial body and out into the space surrounding the celestial body to travel in a straight line and to help produce the gravity of that celestial body. According to this description, all of the above mean free paths, except the first one and the last one, are in random direction; so, they do not create a net gravitational force in any particular direction. **Therefore, only the first approximately 7 million meters of the path of the neutrino photon in a celestial body creates a force directed back toward the source of the neutrino photon.** For reasons explained below, almost all of the neutrino photons illuminating the stars, planets and moons of our Solar System are from the Black Hole at the center of our galaxy. So, our entire Solar System and everything in it (including our sun, earth and moon and the other planets and moons of the Solar System) is being attracted to each other; and the Solar System is attracted to the Milky Way Black Hole continuously by the neutrino photon gravity of the Milky Way Black Hole. Luckily, the **momentum** of the components of our solar system creates centrifugal forces that balances the gravitational pull of the Black Hole, causing our Solar System to happily and safely orbit the Milky Way Black Hole in its elliptical path.

### **THE BACKWARD GRAVITATIONAL FORCE**

As explained above, the reverse force produced by the neutrino photons results from the fact that during each cycle of the neutrino entron in each neutrino photon, the entron's speed ranges from plus  $3c$  to

minus  $c$  in radial directions out from the Black Hole. When the entron is traveling faster than the speed of light the entron applies no force on objects the entron is passing through, since the entron is traveling faster than the Coulomb forces of its two tronnies. However, when the entron is traveling backwards the entron is, in that portion of its travel, close to in-phase with the Coulomb forces of its two tronnies. So, the net forces applied by neutrino photons from a source of neutrino photons is backwards from the direction of travel of the neutrino photons. This is because the most effective forces are the forces directed backward toward the source of the neutrino photons. **This basically is how gravity works.** FIG. 4 (attached) from my book shows the path of all photons, including the neutrino photon. Take a look. The neutrino entrons are, by far, most effective when they are traveling backward at the same speed as their own Coulomb forces. Primary neutrino photons from the Black Hole at the center of our Milky Way Galaxy are illuminating all celestial bodies in our Solar System keeping our Solar System and all other star systems of our MWG in their orbits around the Black Hole. These same neutrino photons that keep our Solar System orbiting our Black Hole are also furnishing neutrino photons that provide the gravity of the celestial bodies in the MW Galaxy. Stars, planets and moons do not create neutrino photons. But they do capture neutrino photons from the Black Holes and they store them; and the stars, planets and moons later release them as second-hand neutrino photons to produce the gravity of the stars, planets and moons. Second-hand neutrino photons from our sun are passing through our earth keeping our earth in orbit around our sun, and second-hand and third hand neutrino photons from our earth are passing through our moon and our man-made satellites keeping them in orbit around our earth. These second-hand and third hand neutrino photons are also passing through you and me, attracting us toward the center of our earth.

### **TWO TYPES OF GALACTIC GRAVITY**

Based on the above analysis and to reiterate, we have two different situations regarding galactic gravity which we need to analyze separately: (1) primary Black Hole gravity and (2) the second-hand gravity of stars, planets and moons.

**Black Hole Gravity:** As explained above, black Hole gravity at equilibrium is going to be based only indirectly on the mass of the Black Hole, but it is going to be approximately equivalent to the rate of creation by the Black Hole of anti-protons which will correspond to the rate of annihilation of protons in the matter consumed by the Black Holes. We do not know the mass of any Black Hole, but what we do know, based on my model as explained above, is that one neutrino photon is released from Black Holes for each proton destroyed by the Black Holes.

**Star, Planet and Moon Gravity:** The **gravity** of stars, planets and moons is **only indirectly based on their masses**; but is instead based on neutrino photon illumination (primarily from the one or more Black Holes at the center of each galaxy and the Monster Black Hole at the center of each universe, and to a much less extent secondary neutrino photons from other celestial bodies) and on the cross-sectional areas (i.e.  $\pi r^2$ ) of the stars, planets and moons and the cross-sectional areas of their surfaces (i.e.  $4\pi r^2$ ); both of which are a function of the radii of the stars, planets and moons. Neutrino photons from outside each galaxy will, in almost all cases, be insignificant compared to the sources of gravity within the galaxy. (An exception is the neutrino photon flux from the Monster Black Hole at the center of each universe as I discuss beginning in the next section.) The neutrino photon radiation radiated from a celestial body at equilibrium will be radiated randomly and generally perpendicular from the surface of the body. Stars, planets and moons are approximately spherical. Spheres have a surface area of  $4\pi r^2$ , where  $r$  is the radius



of the sphere. In my model, as I have explained above, I have estimated that the neutrino photon (np) flux illuminating our Solar System from the Black Hole in the center of the Milky Way Galaxy is about 54,800 np/m<sup>2</sup>s. This estimate is based on an assumption that the Black Hole consumes matter at the rate of one earth-size planet each day. So, with this assumption, the neutrino photon flux radiated from our sun and the large planets of our Solar system is approximately equal to the neutrino photon flux illuminating the celestial bodies divided by four (i.e., about 54,800/m<sup>2</sup>-second/4 = 13.700/m<sup>2</sup>-second). So, our earth receives neutrino entrans directly from the Black Hole at the center of our galaxy and secondarily from our sun and moon and to a much less extent from the other celestial bodies in our Solar System. Substantially all captured neutrino photon radiation illuminating our earth is ultimately radiated out of our earth through its surface to provide our earth's gravity and as I explain below, neutrino photons illuminating our earth from our sun and moon is very small compared to the neutrino photons received from our Black Hole. As explained above, this applies to all celestial bodies in our galaxy other than the single Black Hole at the center of our galaxy (which, as explained above, consumes portions of our galaxy to produce its neutrino entrans and their corresponding neutrino photons). The same is true for all other galaxies except a few galaxies that have more than one Black Hole, in which case the more-than-one Black Hole will be providing primary gravity.

### THE SOURCES OF EARTH'S GRAVITY

So, the sources of our earth's gravity are primary neutrino photons from the Black Hole at the center of our Milky Way, and to a much less extent the primary neutrino photons from the MBH at the center of our Universe, and secondary neutrino photons from our sun and our moon. So, let us compare each of these three sources.

**The Black Hole illumination of our Solar System from the MW Black Hole:** We have already estimated the Solar System flux of neutrino photons (np) from our Milky Way Black Hole illuminating our solar system from 26,000 lightyears away at the center of our MWG. It is 54,800 np/m<sup>2</sup>second.

**Neutrino Photon Illumination of Our Earth from Our Sun:** The radius of our sun is about  $0.696 \times 10^9$  meters. So, the sun's cross-section area is about  $\pi r^2 = 1.522 \times 10^{18} \text{ m}^2$ , and the total neutrino photons received by our sun from our **Black Hole** is  $(54,800 \text{ np/m}^2\text{s}) \times (1.522 \times 10^{18} \text{ m}^2) = 83.4 \times 10^{21}$  neutrino photons/second. (We are assuming that the total number of neutrino photons released from our sun is equal to the total number of neutrino photons illuminating our sun.) The distance from our sun to our earth is about  $1.496 \times 10^{11}$  meters. The surface area of a sphere with a radius of  $1.496 \times 10^{11} \text{ m}$  is equal to  $4 \pi r^2 = 28.12 \times 10^{22}$  square meters. So, the neutrino photon flux at our earth from our sun is equal to, at equilibrium,  $83.4 \times 10^{21}$  neutrino photons/second divided by  $28.12 \times 10^{22}$  square meters or **0.297 neutrino photons/m<sup>2</sup>s**. This flux is insignificant compared to the flux (of 54,800 np/m<sup>2</sup>s) our earth receives directly from our galactic Black Hole. But the flux from the sun is not insignificant, since our earth, with a radius of about  $6.378 \times 10^6 \text{ m}$ , has a cross-section  $\pi r^2$  of about  $127.8 \times 10^{12} \text{ m}^2$ . So, the neutrino photon illumination of our earth from our sun is the product of the neutrino photon flux from our sun and the cross-section of our earth (i.e.,  $0.368 \text{ neutrino photons/m}^2\text{s} \times 127.8 \times 10^{12} \text{ m}^2$ ) about **37.9 trillion neutrino photons/second!** We can refer to this total of neutrino photons per second as a **neutrino photon current** applied by our sun on our earth to hold our earth in its orbit around our sun.

**Neutrino Photon Illumination of Our Sun from Our Earth:** The radius of our earth is about  $6.378 \times 10^6 \text{ m}$ . So, the earth's cross-section area is about  $\pi r^2 = 127.8 \times 10^{12} \text{ m}^2$ , and the total neutrino photons received by our earth from our Black Hole is  $(54,800 \text{ np/m}^2\text{s}) \times (128 \times 10^{12} \text{ m}^2) = 7014 \times 10^{15}$  neutrino

photons/second. All of these neutrino photons per second, at equilibrium, are released in all directions. The distance from our earth to our sun is about  $1.496 \times 10^{11}$  meters. The surface area of a sphere with a radius of  $1.496 \times 10^{11}$  m is equal to  $4\pi r^2 = 28.12 \times 10^{22}$  square meters. So, the neutrino photon flux at our sun from our earth is equal to, at equilibrium,  $7014 \times 10^{15}$  neutrino photons/second divided by  $28.12 \times 10^{22}$  square meters, or  **$249 \times 10^{-7}$  neutrino photons/m<sup>2</sup>s**. This flux is insignificant compared to the flux (of 54,800 np/m<sup>2</sup>s) our sun receives from our galactic Black Hole. But again, it is not insignificant. Since our sun, with a radius of about  $0.695 \times 10^9$  m, has a cross-section  $\pi r^2$  of about  $1.522 \times 10^{18}$  m<sup>2</sup>. So, the neutrino photon illumination of our sun from our earth is the product of the neutrino photon flux from our earth and the cross-section of our sun (i.e.,  $249 \times 10^{-7}$  np/m<sup>2</sup>s  $\times$   $1.522 \times 10^{18}$  m<sup>2</sup>) about **37.9 trillion neutrino photons/second!** **So, our sun receives the same number of neutrino photons from our earth as the earth receives from our sun, amazing!!!** This is the same np/s current as we calculated above but it is not causing our sun to orbit our earth; however, this current probably does produce small tidal forces on the surfaces of the sun which may or may not be detectable.

**Neutrino Photon Illumination of Our Earth from Our Moon:** Our moon has a radius of about  $1.737 \times 10^6$  m, so its cross section is about  $9.48 \times 10^{12}$  m<sup>2</sup> and the total neutrino photons received by our moon from our galactic Black Hole ( $54,800/\text{m}^2\text{s} \times 9.54 \times 10^{12}\text{m}^2$ ) is about  **$523 \times 10^{15}$  neutrino photons/second**. The distance between our moon and our earth is about  $384.4 \times 10^6$  m. The surface area of a sphere with a radius of  $384.4 \times 10^6$  m is equal to  $4\pi r^2 = 185.7 \times 10^{16}$  m<sup>2</sup>. So, the **neutrino photon flux** at our earth from our moon is  $523 \times 10^{15}$  neutrino photons/second divided by  $185.7 \times 10^{16}$  m<sup>2</sup> = **0.281 neutrino photons/m<sup>2</sup>s**, which is not much different from the neutrino photon flux our earth receives from the sun. So, the **total neutrino photon illumination** of our earth from our moon is equal to 0.281 np/m<sup>2</sup>s times the cross section of our earth which is  $128.16 \times 10^{12}$  m<sup>2</sup> or ( $0.349$  np/m<sup>2</sup>s)  $\times$  ( $128.16 \times 10^{12}$  m<sup>2</sup>) = **36.0 trillion np/s, only if our moon accumulates all of the neutrino photons illuminating the moon.** To the extent the illuminating photons pass entirely through the moon the flux received by our earth from our moon would be reduced. For example, if I am correct that the half of the neutrino photon flux illuminating our moon passes through the moon without accumulating in the moon, the neutrino photon flux at our earth from the moon would be about half of that calculated above.

**Neutrino Photon Illumination of Our Moon from Our Earth:** Our earth has a radius of about  $6.378 \times 10^6$  m, so its cross section is about  $127.79 \times 10^{12}$  m<sup>2</sup> and the total neutrino photons received by our earth from the Black Hole is about ( $54,800/\text{m}^2\text{s} \times 127.79 \times 10^{12}$  m<sup>2</sup>)  $7,002 \times 10^{15}$  neutrino photons/second. The distance between our moon and our earth is about  $384.4 \times 10^6$  m. The surface area of a sphere with a radius of  $384.4 \times 10^6$  m is equal to  $4\pi r^2 = 185.7 \times 10^{16}$  m<sup>2</sup>. So, the neutrino photon flux at our moon from our earth is  $7,002 \times 10^{15}$  neutrino photons/second divided by  $185.7 \times 10^{16}$  m<sup>2</sup> = **3.77 neutrino photons/m<sup>2</sup>s**, which is 13.4 times the flux received by the earth from the moon. (This 13.4 is the ratio of our earth's cross section to our moon's cross-section.) But, as expected the neutrino photon flux received by our moon from our earth is still insignificant compared to the neutrino flux (54,800 neutrino photon/m<sup>2</sup>s) received by our moon from our Black Hole. Again, it is also important to note that the total neutrino photon illumination of our moon from our earth is ( $3.78$  np/m<sup>2</sup>s)  $\times$   $9.54 \times 10^{12}$  m<sup>2</sup>) = **36 trillion np/s**; the same that is received by our earth from our moon; but this is true only if the moon accumulates all of its illuminating neutrino photons. To the extent the moon accumulates less neutrino photons than the amount illuminating the moon the radiation of the earth from the moon will be reduced.

### COMPARISON: NEWTON GRAVITY - ROSS MODEL GRAVITY

A valid question is: "How does my value of neutrino photons per second compare to Isaac Newton's gravitational force between two massive bodies, i.e., between our earth (e) and our sun (s)."

#### Isaac Newton's result:

The mass of our earth is about  $5.98 \times 10^{24}$  kg. The mass of our sun is about  $1.59 \times 10^{30}$  Kg and  $r = 1.496 \times 10^{11}$  m. So, Isaac would calculate:

$$F = G m_e m_s / r^2$$

$$F = (6.67408 \times 10^{-11} \text{ m}^3/\text{kg}\cdot\text{s}^2) \times (5.98 \times 10^{24} \text{ kg}) \times (1.59 \times 10^{30} \text{ kg}) / (1.496 \times 10^{11} \text{ m})^2$$

$$F = 28.35 \times 10^{21} \text{ kg}\cdot\text{m}/\text{s}^2 = 2.835 \times 10^{22} \text{ newtons.}$$

Isaac Newton's equation determining the gravitational force indicates that the earth exerts the same gravitational force on our sun as the sun exerts on our earth, i.e., **2.835 X 10<sup>22</sup> newtons**.

Let's see how much both bodies are accelerated. The mass of our earth is  $5.98 \times 10^{24}$  kg and the mass of our sun is  $1.59 \times 10^{30}$  kg. So, using  $F = ma$  and recognizing that a newton is the same as a kg-m/s, we see that the acceleration  $a$  of our sun is:

$$a = F/m = 7.5 \times 10^8 \text{ kg}\cdot\text{m}/\text{s}^2 / 1.59 \times 10^{30} \text{ kg} = 2.12 \times 10^{-21} \text{ m}/\text{s}^2.$$

The acceleration of our earth is:

$$a = F/m = 7.5 \times 10^8 \text{ kg}\cdot\text{m}/\text{s}^2 / 5.98 \times 10^{24} \text{ kg} = 1.25 \times 10^{-16} \text{ m}/\text{s}^2.$$

#### Ross Model Results:

This force of  $2.835 \times 10^{22}$  N can be compared to the result calculated above for the sun-earth neutrino illumination values, both of which were **37.9 X 10<sup>12</sup> np/s**. I have shown above that, "So, our sun receives the same number of neutrino photons from our earth as the earth receives from our sun, amazing!!! That number is: **37.9 trillion neutrino photons/second!**" So, 3.79 X 10<sup>13</sup> np/s corresponds to 28.35 X 10<sup>21</sup> newtons; therefore:

$$\mathbf{1.0 \text{ np/s} = 7.48 \times 10^8 \text{ newtons.}}$$

These approximately **750 million newtons** correspond to about **168.6 million pounds-force**. This at first seems hard to believe that one tiny neutrino photon per second could produce a force equal to about 168.6 million pounds. **(Some people believe the gravitational force is a weak force.)** But we are assuming that the Coulomb force of the neutrino photon is applied over a distance of 7 million meters. And work and energy are the product of force and distance. So, the Coulomb forces of the entron in the neutrino photon is applied over the first 7-million-meter mean-free path of each of the neutrino photons illuminating the celestial bodies. The wavelength of the neutrino photon is about  $1.335 \times 10^{-15}$  m, so during the first 7-million-meter mean-free path, each of the neutrino photons from our sun will each exert its backward force on our earth a total of about  $5 \times 10^{21}$  times. That is about 5 billion-trillion increments of force. **Each force increment is small but there are lots of increments.** Also, don't forget that my estimate of the neutrino photon current from our sun on our earth is 37.9 trillion np/s! (And if we multiply  $37.9 \times 10^{12}$  np/s times  $7.48 \times 10^8$  N/np/s we get **2.835 X 10<sup>22</sup> N.**) Maybe one of you readers can more precisely estimate the net force applied during this first 7-million-meter path of the neutrino photon into

our earth or suggest a better estimate of the length of the first mean free path. And don't forget the gravity of our sun has the total responsibility of keeping our earth orbiting around our sun. It should not be a surprise that a lot of force is required. (Suppose our Sun was trying to hold our Earth in its orbit about the Sun with a strong rope; it would need to be a very strong rope.)

### GRAVITATIONAL FORCE ON SMALLER BODIES

In the above section by comparing forces produced by neutrino photon current with gravitation calculated according to Isaac Newton equations, I have estimated that, for large bodies in the solar system, a neutrino photon current of 1.0 np/s = 748 million newtons. This estimate is based on an initial estimated mean-free path of neutrino photons in matter of 7 million meters in celestial bodies with dimensions much larger than 7 million meters. So, what about bodies much smaller than 7 million meters? Below, I have attempted to relate the gravitational force of our earth at its surface on **me**.

The earth's cross section is about  $127.8 \times 10^{12} \text{ m}^2$ . As explained above, the great majority of the Earth's neutrino photon illumination is from the Black Hole at the center of our galaxy (from a distance of 26,000 lightyears) is about 54,800 np/m<sup>2</sup>s. Earth's neutrino photon flux from other bodies (including our sun and our moon as well as the Monster Black Hole at the center of our Universe) is very small in comparison to its illumination from our Milky Way Black Hole. Gravitational forces from the Milky Way Black Hole on earth depend on earth's cross section according to  $A = \pi r^2$ . Almost all neutrino photons accumulated in our earth are, at equilibrium, radiated out of the surface of our earth. The surface area of a sphere is determined by  $A = 4\pi r^2$ . Our earth is approximately a sphere; so, earth's surface neutrino photon (np) flux is about one-fourth of 54,800 np/m<sup>2</sup>s i.e., about 13,700 np/m<sup>2</sup>s.

My body is comprised of atoms (mostly oxygen, carbon, hydrogen, calcium and phosphorus, the rest is less than 2 percent). My weight on the surface of earth is about 140 pounds (equivalent to about 627 Newtons). My mass is about 64 kilograms. A single oxygen atom has a mass of about 16 amu, which is equal to about  $[(16 \text{ amu}) \times (1.66 \times 10^{-27} \text{ kg/amu})] = 26.56 \times 10^{-27} \text{ kg}$ . So, I am estimating that the approximate number of atoms in my body is  $64 \text{ kg} / 26.56 \times 10^{-27} \text{ kg/atom} = 2.41 \times 10^{27}$  atoms. Oxygen represents 65 percent of my mass and its mass is near the middle of masses of the other atoms. So, I have modeled myself as being comprised of only oxygen-16 (the most abundant isotope of oxygen) and having a cubic shape with a volume of 64,000 cubic centimeters, a mass of 64 kilograms and a cross section of 0.16 m<sup>2</sup>. Since  $(13,700 \text{ np/m}^2\text{s}) \times (0.16 \text{ m}^2) = 2,192 \text{ np/s}$ , **I estimate that roughly 2,192 neutrino photons every second are continually passing upward through my body producing a gravitational force pulling or pushing me toward the center of our earth.** According to my **Ross Model – Stable Isotope Chart** (available at [tronnies.com](http://tronnies.com)) each oxygen-16 atom is comprised of 4 alpha particles in its nucleus with 8 orbiting electrons. Each alpha particle is comprised of 4 protons and two electrons and each proton is comprised of 2 positrons and one electron which is combined with one neutrino entron that gives the proton almost all of its mass. So, each oxygen atom is comprised of 32 positrons, 24 electrons and 4 neutrino entrons in its nucleus with 8 orbiting electrons. This adds up to 32 positrons, 32 electrons and 4 neutrino entrons in one atom of oxygen-16. Since I have about  $2.41 \times 10^{27}$  atoms in my model of my body; and since  $32 \times 2.41 \times 10^{27} = \text{about } 77 \times 10^{27}$  and  $4 \times 2.4 \times 10^{27} = \text{about } 10 \times 10^{27}$ ; I estimate that my body contains  $77 \times 10^{27}$  positrons,  $77 \times 10^{27}$  electrons and  $10 \times 10^{27}$  neutrino entrons.

Electrons and positrons are each three tronnies (point particles occupying zero space) that are circling with diameters of  $0.9339 \times 10^{-18}$  meters (less than a billionth of a billionth of a meter), with two of the

tronnies, of the electron and the positron, circling through the path of the other tronnie and the other tronnie is circling through the paths of the two tronnies. The four neutrino entrons are combined with four electrons in the four protons in each alpha particle (without increasing the size of the four electrons). The shape of electrons and positrons is similar to the shape of an American football and their cross-sections depends on how you view it and how it is spinning, but the maximum diameter of the electron and the positron is  $2 \times (0.9339 \times 10^{-18} \text{ m}) = 1.87 \times 10^{-18} \text{ m}$ , so their volume ( $V = \pi r^3$ ) has to be less than  $V = (\pi) \times (1.87 \times 10^{-18}/2)^3 = 6.54 \times 10^{-54} \text{ m}^3$ . As explained above there are in my body about  $7.7 \times 10^{28}$  positrons and  $7.7 \times 10^{28}$  electrons. So, the total volume provided by the electrons and positrons in my body is less than  $2 \times (7.7 \times 10^{28}) \times 6.54 \times 10^{-54} \text{ m}^3 = 1.01 \times 10^{-24} \text{ m}^3$ . My body also contains a tremendous number of low-energy entrons in addition to the neutrino entrons that are passing through my body; but low energy entrons do not affect the paths of the 928 MeV neutrino entron. Each low energy entron is two circling tronnies which are point particles which do not occupy any space in my body. So, the only things occupying space in my body that would interfere with the paths of the neutrino photons are electrons and positrons. **The total volume of my body is about 0.064 m<sup>3</sup>, so, compared to the volume of electrons and positrons (i.e., 1.01 X 10<sup>-24</sup> m<sup>3</sup>), the empty space in my body is more than a billion-trillion times the volume of the electrons and positrons. Therefore, I and everyone else is almost completely empty space, at least as far as the neutrino photons and the neutrino entrons are concerned.**

The important question is how does the neutrino photon current of about 2,192 np/s passing up through my body provide a force on my body equivalent to my weight of about 140 pounds? Something is causing my body to produce a force on the bathroom scales I keep in my home office. Most people would probably say it's gravity, but science has not yet provided a logical explanation of gravity. My explanation is that the surface gravity of earth is provided by neutrino photons that have accumulated inside our earth and are now passing upward through the surface of our earth and through my body pushing my body down on my bathroom scales.

The other question is how does this neutrino photon flux passing upward through my body produce a force of about 627 newtons? I have estimated the surface gravitational flux at 13,700 np/m<sup>2</sup>s, and my cross section as 0.16 m<sup>2</sup>. This would provide a neutrino photon current through my body of about 2,192 np/s which should provide a reverse force on my body equivalent to 627 newtons. In the above section I developed a conversion of np/s to newtons of: **1.0 np/s = 748 X 10<sup>6</sup> N**; however, this conversion was based on an assumption that the mean free path of the neutrino photons was 7 million meters. The path through me is only about 0.4 m. So, we could reduce the above conversion by the ratio of 0.4 m / 7 X 10<sup>6</sup> m = 0.057 X 10<sup>-8</sup>. If we do the conversion for my body would be: 1.0 np/s = (7.48 X 10<sup>8</sup> N) X (0.057 X 10<sup>-8</sup>) = 0.426 N. As estimated above the neutrino photon current through my body is roughly estimated to be 2,192 np/s. So, if we multiple that neutrino photon current by my body's conversion factor we get:

$$(2,192 \text{ np/s}) \times (0.426 \text{ N}) / (\text{np/s}) = 934\text{N}, \text{ and}$$

$$(934 \text{ N}) \times (0.2248 \text{ pounds/N}) = 210 \text{ pounds}.$$

So, using a conversion of 1.0 np/s to produce a result of: 0.426 N, which is equal to about 210 pounds, gives an incorrect prediction of my weight which is only 140 pounds. However, considering all the wild assumptions that I made to estimate my weight based such a roughly calculated neutrino photon current, I was happy to be in the ballpark. I could possibility improve my assumptions with further analyses or

testing, but I could solve this problem by simply using a different conversion factor for people on earth in order to force the correct result. That conversion factor would be:

$$\mathbf{1.0 \text{ np/s} = 0.284 \text{ newtons}}$$

So, with that conversion factor, the neutrino photon current of 2.129 np/s at earth's surface would correspond to a weight for me of  $(2,129 \text{ np/s}) \times (0.284 \text{ N/np/s}) = 604.6 \text{ N} = 140 \text{ pounds}$ , which is correct. Fat people modeled as a cube with a volume twice as large as mine would have a larger cross section and the paths of the neutrino photons through their cubic bodies would be larger so their predicted weight should be about twice as large as mine.

Readers, may wonder why I am not dead a long time ago if about 2,192 neutrino photons have been passing upward through my body continuously every second for all of my adult life, especially, since I have explained that a neutrino photon has an energy of 928 MeV which is almost one thousand times more energetic than a typical dangerous gamma ray photon (at about 1.02 MeV). **The reason why everyone on earth is not dead is that, as far as neutrino photons and their neutrino entrons are concerned, people (as well as almost everything else in the Cosmos) are almost completely empty space!**

### **ARE NEUTRINO PHOTONS HARMLESS?**

The above calculation resulted in a rough prediction of about 2,192 neutrino photons passing through my body every second. And I concluded that the chance of a collision with an electron or a positron during a one second period was extremely small. However, GOOGLE tells me that there are more than 2.5 billion one-second periods in a lifetime of about 80 years. So, I don't think we can predict that there is no risk associated with gravity. On the other hand, I am proof positive that people can survive in the Solar Systems gravity field for at least 83 years. In any event there does not appear any practical way of avoiding the Solar System gravity without leaving the system. **Therefore, we could maybe:**

**(1) do a better job of estimating of the gravity risk, or**

**(2) better still, not worry about gravity, since there is no way to avoid it, at least in the near future.**

### **A COSMOS FROM NOTHING**

According to the **John Ross Model of the Cosmos** as I have explained above, in the very beginning, before there was anything, there was nothing, just empty space. Points in empty space became divided into two parts. These two parts were my plus and minus tronnies. Everything in the Cosmos has evolved from tronnies. I have explained how electrons, positrons and entrons/photons were made from tronnies. I have explained how protons and anti-protons were made from electrons, positrons and entrons. I have explained how hydrogen atoms were made from protons, electrons and entrons and how alpha particles were made from hydrogen atoms and entrons. And I have explained that the nuclei of all stable atoms have evolved from combinations of up to 59 alpha particles, up to three protons and up to 27 electrons and a lot of entrons. Most of this evolution takes place in stars. I believe there is general agreement among scientists that stars can be classified into three groups based generally of the size of the stars; i.e., small, medium and large. So, I want to now provide a quick description of the life and death of these three types of stars. I have defined our Cosmos as everything that currently exist, has existed in the past since the beginning of time and will exist in the future forever. I define "universes" as the collections of

galaxies that move within the Cosmos based on the gravity of a Monster Black Hole located approximately at the center of the respective universe. The number of universes in the Cosmos is unknown, but the number is probably very large. All of the galaxies in each universe move within the universe under the control of the gravity of a MBH at the center of the universe. Galaxies that are not under the control of the MBH are not a part of the universe. In our Universe and maybe all Universes star systems fall into three categories depending on their sizes. A star that has a mass smaller than 8 solar masses are considered to be a “small star”. A star with a mass smaller than 29 solar but larger than 8 solar masses is considered to be a “medium size star” and a star larger than 29 solar masses is considered a “large star.”

### TYPES OF STARS

#### Small Stars Produce White Dwarfs

A small star may be defined as a star with a mass less than 8 times the mass of our sun (the mass of our sun is referred to as a solar mass). So, our sun falls into this category. Its life began as part of a cloud of mainly hydrogen atoms located in our Milky Way Galaxy and orbiting the Black Hole located at the center of our Milky Way Galaxy. Neutrino photons, provided by the Black Hole illuminating the cloud of mostly hydrogen, accumulated mostly in the center of the cloud and tended to spread out mostly from the center of the cloud providing backward gravitational forces which produced a concentration of hydrogen at the center of the cloud and an increase in the temperature and pressure at the core of the cloud. At some point the temperature and pressure at the center of the cloud increases to a point where hydrogen begins fusing into alpha particles (the nuclei of helium). (That temperature is probably about  $2.387 \times 10^9$  Kelvin which is the temperature that corresponds to a 1.0214 MeV gamma ray entron/photon according to Wien's Law.) This is, according to my model, one of the three entron/photons needed for pair production. Scientists believe our sun is currently at an age of about 4.6 billion years. It is converting hydrogen from the cloud into alpha particles (helium nuclei) via nuclear fusion, where the difference in mass between four hydrogen atoms and one helium atom is converted into energy. The energy produced by our sun is sufficient to heat and light our entire Solar System. Most people are not aware that the conversion of mass to energy in nuclear fusion is only about 0.7 percent efficient [less than 1.0 percent]. Readers should be happy to learn that Black Holes convert mass into energy with an efficiency of almost 100 percent in the course of providing the gravity for their galaxy. Our sun will continue burning hydrogen to produce alpha particles for another 5 billion years. I understand that our sun does not have enough mass to explode as a supernova, but will pass through a stage as a red giant where it expands more than 200 times its current size and it is expected to destroy our earth in the process. (Hopefully, our descendants will figure out a way to deal with this **climate change**.) Our sun is expected to end its active life as a **white dwarf**. I understand that our sun is expected to convert some helium into carbon but it is not expected to produce atoms more massive than carbon. The white dwarf may ultimately be consumed by the Black Hole at the center of our galaxy or by another Black Hole. Stars with masses less than 8 solar masses (including our sun) do not produce any gravity since they do not create any neutrino entrons. As I explain above our sun, receives its gravity in the form of neutrino photons almost entirely from the Black Hole in the center of the Milky Way Galaxy and our sun radiates neutrino photons as second-hand neutrino photons.

### Medium Size Stars Produce Tiny “Alpha” Stars

I am informed that astronomers believe stars with masses between 8 and 29 solar masses also start as clouds of mostly hydrogen and they end their lives as so-called “neutron stars”. (A solar mass is about  $1.59 \times 10^{30}$  kg.) Astronomers estimate that there are at least 2,000 so-called neutron stars in our Milky Way Galaxy. Some astronomers believe there could be 100 million neutron stars in our galaxy.

I understand that Astronomers believe that these stars in the range of 8 to 29 solar masses tend to collapse after the stars have consumed all of its hydrogen to produce (through fusion reactions) elements up to iron and nickel. Apparently at this point, the core of the star collapses and the temperature in the star increases to over  $5 \times 10^9$  K. Astronomers believe the high temperatures causes electrons and protons to combine producing neutrons and a flux of **neutrinos** and the creating of a supernova event. Astronomers believe that “neutron stars” produce enormous magnetic fields. My Ross Model of the Cosmos suggests a simpler description of the creation of “neutron stars”. To begin with, an important feature of my Ross Model is that neutrons have a half-life of 10.3 minutes, whether they are inside or outside atomic nuclei. To the extent neutrons are created, they decay by one half in 10.3 minutes producing protons, electrons and high-energy photons. After a few hours they will all be gone. **Also, my Ross Model does not include neutrinos. Neutrinos do not exist.**

My simpler explanation is based on my Ross Model features is that:

- (1) the nuclei of iron-56 is comprised of 14 alpha particles and two electrons and the nuclei of nickel-60 is comprised of 15 alpha particles and two electrons and
- (2) magnetic fields are produced by ground state electrons self-propelled at their natural speed of  $2.19 \times 10^6$  m/s.

All stable nuclei from carbon-12 to iron-56 and nickel-60 are comprised of mostly alpha particles and gamma ray entrans, at least some of which are released when alpha particles are combined in stars to make heavier isotopes up to iron-56 and nickel-60. According to my model, Fe-56 and Ni-60 are the only stable isotopes that do not include in their nuclei any significant gamma ray entrans. An outside source of energy is required in these medium-size stars to create isotopes heavier than Fe-56 and Ni-60. This outside source can be supplied in the course of a gravitational collapse of these stars to create the so-called “neutron star”.

The outside source could be supplied by hydrogen, but for medium size stars, all of the star’s hydrogen will at some point, be consumed. The outside source of energy can also be provided by neutrino photons from the Black Hole in the star’s galaxy or by the MBH at the center of our Universe. The neutrino photons from the Black Hole that is accumulated in the medium size star (during the buildup of atoms between carbon and iron and nickel) can produce attractive forces in the form of gravity to cause a collapse of the star. In the collapse of medium size stars, combinations of iron and nickel nuclei can continue until parts of the star is a huge matrix of alpha particles, **all spaced apart at nuclear dimensions (about  $1.2 \times 10^{-15}$  m**, somewhat larger than the size of a proton). At these dimensions alpha particles can be attractive to each other. Each combination the iron and nickel nuclei will produce additional shrinking of the star to a size based on the size of the **nuclei** of iron and nickel as compared to the size of the **atoms** of iron and nickel. The radius of nuclei to the radius of atoms is about  $10^{-15}/10^{-10}$  which is equal to about  $10^{-5}$  or 1:100,000 or 1 to one hundred thousand. But the volume of nuclei to the volume of atoms is the cube of the radius, i.e.,  $10^{-45}/10^{-30}$  which is equal to about  $10^{-15}$  or one to one thousand trillion. So, this



analysis would indicate, for a conversion from atomic sizes to nuclear sizes would produce **an increase in its density by a factor in the range of about one thousand-trillion!**

The electrons that have been pushed out of the atoms now become orbiting electrons but instead of orbiting around individual nuclei which is no longer possible because the alpha particles are packed too tightly. Instead, the electrons orbit through the created matrix of alpha particles to produce an enormous celestial magnet. (Remember naked electrons are only about twice the size of a neutrino entron; so, they can easily pass through an alpha particle matrix where the alpha particles are spaced at about  $10^{-15}$  m.) According to astronomers, magnetic fields of “neutron stars” are  **$10^4$  to  $10^{14}$  tesla!** This compares to the earth’s magnetic field of  $2.5 \times 10^{-4}$  to  $6.5 \times 10^{-4}$  tesla. So, this comparison of magnetic fields of our earth to the magnetic field of a neutron star is indicative of increases in the range of about  $10^8$  to  $10^{18}$ .

The core of the star will reach a temperature of  **$2.38 \times 10^9$  degrees Kelvin.** Pair production and electron positron annihilation is greatly increased. This produces a great increase in the neutrino photon flux coming out of the hot core causing the upper regions of the star to begin a major contraction. This results in a corresponding exponential increase in neutrino photon flux directed out of the core of the star forcing the outer regions of the star to collapse toward the core region. The pressure in the core becomes so great that the electrons orbiting iron and nickel atoms in the core of the star are squeezed out of their orbits and these electrons shed their excess energy in the form of high-energy entrons so that the electrons become ground state electrons and begin traveling at their natural speed of 2.19 million meters per second through the core and the rest of the star. The absence of electrons orbiting the iron and nickel nuclei encourages further compaction of the core region of the star and the increased pressure in the core forces the 14 alpha particles in the iron nuclei and the 15 alpha particles in the nickel nuclei close enough together (i.e, at distances of about  $1.2 \times 10^{-15}$  m) so that all of the alpha particles in the star begin attracting each other. A huge amount of energy will be released as a result of the shedding by electrons of their excess energy, and this excess energy results in a blowing off much of the surface of the star creating a small supernova. Contraction continues until the distance separating the alpha particles is small enough that the repulsion between the alpha particles overcomes the compressive gravitational force produced by the neutrino photons traveling through the upper regions of the star. When the attractive forces between the alpha particles equals the repulsive forces between the alpha particles, the alpha particles will form themselves into a huge and stable matrix of alpha particles much like matrixes of multiple alpha particles in the nuclei of C-12, O-16, Ne-20, Mg-24, Si-28, S-32, Ar-36, and Ca-40 simulating a giant atomic nucleus. This produces a gigantic concentration of positive charge. So, the core is now basically a solid matrix of alpha particles, neutral entrons and some electrons. But many, most or all of the orbiting electrons that have been forced away from the Fe-56 and Ni-60 nuclei are attracted back to the very positively charged alpha particle matrix. These electrons are tiny (with a diameter of about  $2 \times 10^{-18}$  m) ground state electrons, so they must travel at their natural speed of  $2.19 \times 10^6$  m/s. But instead of orbiting individual Fe and Ni nuclei or orbiting around the matrix, the electrons begin orbiting **south to north through** the alpha particle matrix and **north to south around** the matrix to create a huge and powerful celestial magnet. This is a **neutron star**; although it should better be called an **“alpha particle star”** or maybe an **“alpha star”**.

An important feature of my Ross Model of the Cosmos is that all magnetic fields are nothing but self-propelled naked electrons orbiting through magnetic materials at their natural speed of  $2.19 \times 10^6$  meters per second, from the south pole to north through and around and outside of the magnetic material from the north pole back to south pole. (See **Chapter XIV** of my book). Ground state electrons can easily pass

through the nuclei of atoms, all which have sizes of about  $10^{-15}$  m, because electrons have much smaller sizes of less than about  $2 \times 10^{-18}$  m. My guess is that in the alpha particle matrix of the neutron star, the alpha particles align themselves so as to provide good pathways for the electrons to pass easily through the center of the four-proton circles in the alpha particles (see FIG. 7).

### **Large Stars Produce Super Nova, Heavy Isotopes and Galactic Black Holes**

Stars larger than 29 solar masses evolve in a fashion similar to the average size stars; however, these larger stars do not undergo a collapse into an “alpha particle star” when the star has converted all its masses of the hydrogen atoms into iron and nickel atoms and has released the gamma ray energy of the hydrogen atoms mostly as lower energy radiation energy. These stars are large enough so that pressure from the outer regions of the star is more than enough to overcome the internal forces. The temperature in the core of the star rises slowly to  **$2.16 \times 10^{12}$  Kelvin**. As explained above, this temperature of  $2.16 \times 10^{12}$  kelvin is the highest temperature possible. Photons at this temperature have a wavelength of about  $1.335 \times 10^{-15}$  m and **the photons are neutrino photons**. Their **entrons are neutrino entrons** with a diameter of  $0.9339 \times 10^{-18}$  m. Additional energy produced by hydrogen fusion in the very large star cannot be utilized to create higher temperature radiation (because according to my model,  $2.16 \times 10^{12}$  K is the highest possible temperature), so the neutrino entrons accumulate in the star as neutrino entrons or neutrino photons and a portion of them migrate to and through the surface of the very large star and escape as neutrino photons, so that the star is now producing its own neutrino photons in addition to accumulating neutrino photons from the Black Hole in its galaxy and/or the Black Hole at the center of its universe.

But the energy produced by the star is utilized by the star to create energetic alpha particles which are added one-by one to the iron and nickel atoms. At this point some readers may want to examine my Ross Model Stable Isotope Chart that can be viewed and down-loaded from my web site: “tronnies.com”. Just click on “news” at my home page (tronnies.com). The nuclei of all of the stable or very long-life isotopes between nickel-60 and uranium-238 consists of alpha particles (15 alphas to 59), protons (0 to 3 protons) and electrons (2 to 28 electrons).

In addition to the alpha particles, electrons and protons are available to create all of the stable isotopes between nickel-60 and uranium 236. This process continues until a very large number of isotopes with masses greater than iron and nickel have been created up to uranium-236 and even heavier radioactive isotopes. However, while these heavier isotopes are being created in these large stars, the population of neutrino photons is growing in the core of the large star (so that the empty space in the core of the star is almost completely taken over by neutrino entrons/neutrino photons); and these neutrino entrons/neutrino photons are applying a huge gravitation force holding the large star together. But the temperature of the star is gradually approaching 2.16 trillion degrees K, which provides an expansive force and, at the same time, a gravitational force produced by neutrino photons coming from the core of the star.

At some point the large star will collapse and explode in a huge super nova. Most of the outer portion of the star will be blown away creating the super nova. The part blown away will spread all of the atoms of the periodic table throughout the region surrounding what was the very large star. The part that is not blown away will collapse into a Black Hole consisting primarily of protons, anti-protons, neutrino photons and matter pulled in by the gravity of the MBH. I am fairly certain as to the temperature of the Black Hole and the only thing that comes out of the Black Hole. The temperature of the Black Hole is  $2.16 \times 10^{12}$  K. This is because the only things that typically come out of the Black Hole is neutrino photons which have a

wavelength of  $1.335 \times 10^{-15}$  m. This radiation cannot be seen or detected with existing technology, so the Black Hole is black. I explain that the temperature of the Black Hole is  $2.16 \times 10^{12}$  Kelvin because the radiation from the Black Hole is in the form of neutrino photons with wavelengths of  $1.335 \times 10^{-15}$  m which corresponds to the temperature of  $2.16 \times 10^{12}$  K. As I have explained above, according to my model, this is the highest possible temperature. The average temperature within the Black Hole is somewhat less because the Black Hole is consuming matter at lower temperatures which tends to lower the average temperature of the Black Hole without affecting the radiation radiated out from the Black Hole. This is because the lower temperature photons cannot get out of the Black Hole

### **BLACK HOLES, UNIVERSES, THE COSMOS - THE BEGINNING AND THE FUTURE**

Now, I would like to do a little bit of speculating as to our origin of the Cosmos our future and how everything works together:

#### **Black Holes**

My **John Ross Model of the Cosmos** defines a Black Hole as a very hot star that converts mass into energy by:

- 1) by breaking down molecules and atoms to release their protons,
- 2) creating anti-protons
- 3) allowing the protons and anti-protons to annihilate each other to release their neutrino entrons,
  - a) one of which, on the average, is used by the Black Hole to create a new anti-proton,
  - b) the other of which is released from the Black Hole as a neutrino photon to provide gravity in the space surrounding the Black Hole.

There are two types of Black Holes:

- 1) A Galactic Black Holes in the middle of each galaxy and
- 2) A Monster Black Holes in the middle of each universe.

According to my model, there are several hundred billion galaxies in our Universe. No one knows the number of galaxies in our Universe. No one knows the number of galaxies in any other universe. No one knows the number of universes in the Cosmos. We have only a pretty good idea of the size of our Universe and a number of galaxies that we can see. The ones that are far away all appear to be receding from each other. I understand that astronomers believe that the number of galaxies in our Universe is about 100 billion to 400 billion. As I have explained above my **Ross Model predicts** that all of the far away galaxies that we can see are receding from the MBH at the center of our Universe and that there are a number of galaxies in our Universe which are approaching our MBH about equal to the number receding from it. There are probably a large number of universes in the Cosmos. (We may never learn even the approximate number of universes in the Cosmos. There is only one Cosmos. In all likelihood the Cosmos is a very large place.

#### **Galactic Black Holes**

Galactic Black Holes are produced by collapse of a massive star as explained above. Science does not have a good explanation of Galactic Black Holes except there is a general consensus that there is at least one

(usually only one) at the center of each galaxy and that they provide the gravity that tends to control the motion of the stars, planets and moons in each of the galaxies. Most scientists believe that there is a steady influx of matter that is continually drawn into Galactic Black Holes as a consequence of their enormous gravity. This includes protons and hydrogen atoms, alpha particles and helium atoms, other atoms, molecules, larger things such as asteroids, moons, planets, and stars. But there is no agreement as to how the Galactic Black Holes produce the gravity or as to what (if anything) comes out of the Galactic Black Holes. I believe that my Ross Model of the Cosmos provides the only logical explanation of Galactic Black Holes and how they provide their gravity. I have dealt with this issue above in this paper but now I will try to summarize my Galactic Black Hole understandings. Pardon me if you, the reader, think I'm being too repetitive.

Galactic Black Holes produce their gravity by creating anti-protons, combining the anti-protons with protons to annihilate both of them to release neutrino entrons; then radiating the neutrino entrons as neutrino photons. As explained above each neutrino photon (with a diameter of about  $0.85 \times 10^{-15}$  m and a wavelength of about  $1.335 \times 10^{-15}$  m) is a neutrino entron with a diameter of  $0.9339 \times 10^{-18}$  m traveling in a perfect circle at a speed of  $2c$  and forward out of the Black Hole at a speed of  $c$ . During a portion of each cycle of the neutrino entron, it is traveling backward at close to, and at, the speed of light (which is the same speed as the speed of the Coulomb forces of the two tronniees of the neutrino entron. The matter through which the neutrino photon passes does not react to the forward speed of the neutrino entron, since in the forward direction the neutrino entron is traveling faster (between  $c$  and  $3c$ ) than the entron's Coulomb forces. But the matter through which the neutrino photon passes does feel a Coulomb force driving the matter backward toward the source of the neutrino photon. Scientists are correct that there is a steady stream of matter being pushed or pulled into Galactic Black Holes by the enormous gravity of the Galactic Black Holes. The matter consumed by the Black Holes is broken down in the Black Holes. Atomic matter is mostly protons and alpha particles, and each alpha particle is broken down to four protons and two electrons. Protons are then broken down into one electron, two positrons and one neutrino entron. Each of the released positrons may capture:

- (1) a 928 MeV neutrino entron (from the enormous flux of neutrino photons in the Black Hole) and
- (2) two electrons,

to produce a very high-speed anti-proton comprised of a very high-energy positron and two electrons.

The very high-speed anti-protons will collect about 8.37 MeV of gamma ray entrons to slow down enough to become a low-speed, high-energy anti-proton. Each low-speed, high-energy anti-proton will quickly combine with a low-speed, high-energy proton and both will be annihilated to release gamma ray entrons, three electrons and three positrons, and two neutrino entrons from each combination of proton and anti-proton. The released neutrino entrons will accumulate in the Black Hole traveling at twice the speed of light. One neutrino entron from each combination is released from the surface of the Black Hole as a neutrino photon to help produce the Black Hole's enormous gravity. The other neutrino entron is utilized to create another anti-proton. So, this is how neutrino entrons and neutrino photons are released from the Black Hole at about the same rate that the incoming matter is consumed and anti-protons are created. The new Black Hole is now producing gravity in the form of neutrino photons and the Black Hole may merge with the Black Hole that the star was orbiting or it may form a new galaxy or it could be consumed by another Black Hole. So basically, one neutrino photon is released from the Galactic Black Hole for each proton consumed by the Galactic Black Hole. The nice part of this process is that the neutrino photons

that illuminate celestial objects provide the gravity that controls the galaxy, but the neutrino photons are not lost. The ones that illuminate stars, planets and moons are ultimately released to provide second-hand gravity of the stars, planets and moons. And ultimately all or almost all of the neutrino entrons of the neutrino photons will ultimately be captured by an electron or a positron in a process to make another proton or anti-proton. These particles will collect gamma ray entrons and will be combined in fusion processes in stars to make all of the atoms in the periodic table and the table of isotopes to in turn be consumed in a Galactic Black Hole. So remarkably, Galactic Black Holes are the ultimate recycling machine.

### Monster Black Holes

I will now attempt to provide a rough guess as to the gravitational force exerted on everything in our MWG by the Monster Black Hole at the center of our Universe. (As explained above, I am assuming that our MBH is located within the Shapley Super Cluster and its gravity is supplemented by the other Black Holes in the Shapley Super Cluster.) I am also assuming that **one sun-size star is consumed per day by the Black Holes at the center of Shapley and one neutrino entron is released for each proton consumed.** (Readers should recognize that the Shapley Super Cluster is only my current best guess as the location of our MBH. If Shapley is not the location of the MBH, the MBH could be pretty close by and aligned with Shapley.) My model requires that our MBH must be somewhere near the center of our Universe.

Here are my assumptions:

Mass of one sun-size star	:	$1.59 \times 10^{30}$ kg
Mass of one proton:		$1.67 \times 10^{-27}$ kg
Number of protons in one sun-size star:		$0.95 \times 10^{57}$ protons
Number of protons consumed per day:		$0.95 \times 10^{57}$ protons per day
The number of seconds per day:		86,000 seconds per day
The number of protons consumed per second:		$1.1 \times 10^{52}$ protons per day
The number of neutrino entrons per proton:		1.0 neutrino entrons/proton
Neutrino photons per neutrino entron:		1.0 neutrino photon/neutrino entron
Neutrino photons/second released by the MBH:		$1.1 \times 10^{52}$ neutrino photons/s
Current Distance of MW Galaxy from the MBH:		$6.149 \times 10^{24}$ m ( $650 \times 10^6$ lightyears)
Surface Area of Sphere ( $A=4\pi r^2$ ) with this radius:		$4.75 \times 10^{50}$ m <sup>2</sup>
Neutrino photon flux at MW Galaxy:		$(1.1 \times 10^{52}$ np/s)/ $4.75 \times 10^{50}$ m <sup>2</sup> = 23 neutrino photons/m <sup>2</sup> s = 0.0023 neutrino photons/cm <sup>2</sup> s
Cross-section of a sun-size star:		= $1.5 \times 10^{18}$ m <sup>2</sup>
Cross-section of $400 \times 10^9$ sun-size stars:		= $6 \times 10^{29}$ m <sup>2</sup>
Neutrino photon flux from MBH at MW Galaxy:		= $(1.1 \times 10^{52}$ np/s) / $4.75 \times 10^{50}$ m <sup>2</sup> = <b>23 neutrino photons / m<sup>2</sup>s</b> = <b>0.0023 neutrino photons / cm<sup>2</sup>s</b>

If we assume that our Milky Way Galaxy has the same effective cross section as 400 billion sun-size stars, we could estimate the cross section of the Milky Way Galaxy by multiplying the cross section of our sun

by 400 billion. On page 52 I estimated the cross section of our sun as  $1.522 \times 10^{18} \text{ m}^2$ . So, we could estimate the **cross section of our Milky Way Galaxy** as: (about  $1.5 \times 10^{18} \text{ m}^2$ ) X ( $400 \times 10^9$ ) = **about  $600 \times 10^{27} \text{ m}^2$** . We estimated above that the neutrino photon flux at the Milky Way Galaxy from the Black Holes in the center of our Universe is about 23 neutrino photons/ $\text{m}^2\text{s}$ . Multiplying that estimate by our rough estimate of cross section of the Milky Way gives us: ( $23 \text{ neutrino photons}/\text{m}^2\text{s}$ ) X ( $600 \times 10^{27} \text{ m}^2$ ) =  $13,800 \times 10^{27} \text{ np/s}$  =  $1.38 \times 10^{31}$  neutrino photons per second. On page 51 by comparing Ross gravity to Newton gravity, I estimated that:

$$1.0 \text{ np/s} = 748 \text{ million newtons.}$$

So, if all of these wild assumptions are reasonable, we could make a ballpark estimate of the force right now on our Milky Way Galaxy attempting to pull us back toward the center of our Universe. It would be:

$$(1.38 \times 10^{31} \text{ np/s}) \times (748 \text{ million newtons/np/s}) = \text{about } 1.03 \times 10^{40} \text{ newtons.}$$

That is about  $10^{40}$  newtons = about 10 thousand-trillion-trillion-trillion newtons. Now our Milky Way has a mass of about  $2.4 \times 10^{42} \text{ kg}$ . We know that acceleration is:  $a = F/m$ . So, our ballpark estimate of the acceleration of our galaxy toward the MBH at the center of our Universe should be about:

$$(10^{40} \text{ kg}\cdot\text{m}/\text{s}^2)/0.24 \times 10^{43} \text{ kg} = \text{about } 4 \times 10^{-3} \text{ m}/\text{s}^2, \text{ about } 4 \text{ mm}/\text{s}^2.$$

**This gravitational acceleration is very small**; however, we need to keep in mind that the center of our Universe is very far away (650 million lightyears) and our galaxy is moving away from it at about 13.4 million meters per second, but the Hubble Flow along with the CMBR is moving away faster at about 14 million meters per second. But relative to the CMBR we are moving toward the Shapley Super Cluster at about 600,000 meters per second. I understand that astronomers believe that the recession speed of our Milky Way Galaxy (and also the other galaxies in the super cluster of galaxies that our Milky Way is a part of) is currently approximately constant at about 13.4 million meters per second (i.e., about 14 million meters per second based on the Hubble Flow evidence minus 0.6 million meters per second. I have suggested that this slowing down relative to Hubble is the result of the gravity of the MBH at the center of our Universe. I suspect that there may be a way to correlate my acceleration value of  $4 \text{ mm}/\text{s}^2$  with the slowing down velocity value of about 600,000 meters per second. But I have not been able to figure that one out. Maybe one of you reader can help me out. It may be that the CMBR associated with our MWG has a different neutrino photon cross section than the celestial objects of our MWG.

### **The Big Bang Theory is Incorrect**

Existing theories developed here on our earth mostly measure time from a theoretical Big Bang event representing the beginning of time that is supposed to have occurred **about 13.75 billion years ago**. Early versions of my **Ross Model of the Cosmos** included a Big Bang event as I explain in detail below on the following page, and in **Chapter XXV of my 2014 book (Tronnies)**. However, according to my current model of the Cosmos, there was **no "Big Bang Event"** that was the birth of our Universe. My current model does propose that our galaxy did pass (or may have passed) right through the region the **MBH** at the center of our universe **about 13.75 billion years ago**; so, if it happened, we could refer to that passage as a **Big Bang event but only for our MWG** and the other galaxies that passed through at about the same time. It would not be a Big Bang Event for any other galaxy. Residents of each galaxy of our Universe with a "Linear-Pass-Through Orbit" could measure time from when their galaxy passes through the region of the MBH, but that event would be at a different time for each linear pass-through galaxy of our Universe. (Two

galaxies passing through the region of the MBH at the same time would be a big mess! Due to the extreme neutrino photon flux (with photon energy equivalent to a temperature of 2.16 trillion Kelvin); passing through the region probably exterminates all forms of life in any galaxy passing close enough to the MBH. I am assuming that the MBH of our Universe is at the center of the Shapley Super Cluster which I understand contains about 8,000 galaxies orbiting the MBH in elliptical orbits. If so, during each passage through the Shapley Super Cluster of the linear pass-through galaxies there will be probably many collisions between the stars, planets and moons of each galaxy with the stars, planets and moons of Shapley during each transit by each galaxy through the Shapley Super Cluster. However, since the passage of galaxies through Shapley will be staggered and the speed of the galaxies during transit will be very fast, the number of serious collisions should be small relative to the total number of passing stars, planets and moons.

As suggested above, the neutrino photon flux from the MBH and all of the Black Holes in the Shapley Super Cluster will be enormous and the temperature in the region of the MBH will probably be close to the maximum possible temperature. So, existing life forms on many planets and moons may not survive the transit. One nice thing about the transit is that the closer we are to the MBH the faster we will be traveling. The only other nice thing about this situation is that for the Milky Way and most other galaxies of our Universe, there are only two transits during each complete about 200-billion lightyear cycle. At an average galaxy speed of about 14 million meters per second, a distance of 200-billion lightyear entire trip would take about 4.2 trillion earth years. (My guess is that our MWG recedes from the MBH for a distance of about 50 billion lightyears and is attracted toward the MBH for a distance of about 50 billion lightyears.) Since our Milky Way Galaxy only “recently” made the transit and we are now located about 650 million lightyears from Shapley and our MBH, our descendants have several trillion earth years to try to figure out how to avoid the next transit or to try to survive the transit if they can’t avoid it. I doubt if there is any way to avoid our Milky Way passing through Shapley and transiting the region of the MBH; however, during the next few trillion earth years (in the spirit of Noah’s Ark), it should be fairly easy for us to build a fleet of space ships so that our descendants (along with at least a pair of other selected life forms) can maybe loop around Shapley and return to a suitable planet in our Milky Way on the other side of the MBH. In the meantime, we currently have to deal with a serious problem of global warming. Also, I understand that our sun will turn into a red giant in a few billion years and may swallow our earth long before our galaxy reaches the turnaround. So, clearly there will be many much-earlier serious problems we will have to deal with.

In any case, we residents of the Milky Way Galaxy can measure time from the transit of the Milky Way through the region of the MBH at the center of our Universe and refer to it as “The Big Bang” as we already do, as long as we understand that it applies only to our galaxy and other galaxies that passed through at about the same time. After turn around, our MWG will have a 50 billion lightyear trip coasting back to Shapley. If we become sophisticated enough to communicate with life forms on other galaxies, we will need to develop a “Universe Time” so we can synchronize our clocks and correlate special events with life forms in other galaxies or a “Cosmic Time” so we can synchronize with life forms in other galaxies in our Universe. Synchronizing with life forms in other Universes will be more difficult.

### **My Earlier Incorrect Explanation of a Big Bang Event**

In my 2014 Book and in my more recent 2.5-hour YouTube lecture, I included an explanation that would support a **Big Bang Theory** in which the Monster Black Hole at the center of our predecessor Universe

would have been destroyed about 13.75 billion years ago by a large number of galaxies crashing into the MBH at about the same time at speeds much faster than the speed of light, establishing the beginning of time and the birth for our new Universe. As I suggested above, I now believe that **there was no Big Bang event** that represents the beginning time and the birth of our Universe. However, I believe that there was a beginning of time, because all of the alternative does not make sense. The alternative is that the Cosmos had no beginning. That is why I came up with the concept of tronnies which are two halves of a point. As I have suggested above, before time began, nothing existed except empty space. So, the beginning of time was when the first point in empty space split into two parts that were **the first plus and minus tronnies**. As I have explained above, I don't know how that happened; however, I am fairly certain that it did. I also believe that space is unlimited, and that the number of universes in the Cosmos is very large but not unlimited. Beyond the edges of the Cosmos there is more empty space. My guess is that the Cosmos including our Universe very gradually evolved from tronnies, entrons, electrons, positrons, protons, hydrogen atoms, stars, alpha particles, heavier atoms, molecules, Black Holes, galaxies, Monster Black Holes and universes. I predict we will very soon identify other universes, beyond and outside our Universe. (This could be important in the distant future since according to my model, time passes at the exact same rate everywhere in the Cosmos.) I also predict that someone will soon prove that about the same number of galaxies are currently approaching the MBH in our Universe as there receding from it. I also believe we will confirm that the size of our Universe is approximately constant (with a diameter of about 100 billion lightyears) and that the size of our Universe is determined by the distance the galaxies of our Universe travel in their linear pass-through cycles of about 200 billion lightyears.

### **The Shapley Super Cluster**

Astronomers tell us that the Shapley Super Cluster is currently located about 650 million light years (equal to about  $6.149 \times 10^{24}$  meters and 199.4 megaparsecs) from our Milky Way Galaxy. The Shapley Super Cluster is reported to be the largest cluster of galaxies in our part of our Universe. **I am also assuming that the Shapley Super Cluster contains within it the Monster Black Hole that is at the center of our Universe. I am assuming that the MBH has been, for trillions of years, in the process of consuming portions of our Universe to provide the gravity holding our Universe together and re-distributing the consumed portion back into our Universe mostly as neutrino entrons and photons to provide a continuous recycling of our Universe. As indicated above, my current explanation does not require the destruction of our MBH, the death of our predecessor universe or the birth of our Universe.** This explanation requires a new understanding of: **the Hubble Flow and the Gravity of the Monster Black Hole at the center of our Universe.**

### **The Hubble Flow**

The Hubble Law is expressed as:

$$v = H_0 D \text{ and } D = v/H_0$$

where  $v$  is a recession velocity between two far away galaxies,  $H_0$  is the Hubble constant about (70 km/s)/mega-parsec),  $D$  is the distance between the galaxies of the Shapley Supercluster and our MWG, i.e., 199.4 mega parsec and  $v$  is the velocity at which our MWG is receding from rom the Shapley Super Cluster, i.e.:

$$v = [(70 \text{ Km/s)/Mpc}] \times [199.4 \text{ Mpc}] = 13,958,000 \text{ m/s (about 14 million m/s)}$$



The Hubble Flow concept teaches that in our Universe, far-away galaxies are in general receding from each other at a rate of about (70 km/s)/Mpc. Most Cosmic models try to explain that this Hubble Flow results from an expansion of the space separating galaxies. If you Google “Shapley Super Cluster” you will see that the distance between Shapley and our Milky Way is about 650 million lightyears. Also, according to our astronomers our Milky Way Galaxy is also currently being attracted toward the location of the Shapley Super Cluster at an estimated speed of about **600 thousand meters/second (i.e., about 0.6 million meters per second)** relative to the cosmic microwave background radiation (CMBR). Apparently, all other galaxies in our Local Group of galaxies (including the Andromeda Galaxy) are also receding and being attracted in the same general direction as our Milky Way Galaxy at about the about same speed relative to the CMBR. **My model, at least tentatively, assumes that the Shapley Super Cluster and the Monster Black Hole in it are both approximately stationary with respect to the CMBR and that the galaxies that are a part of the Shapley Super Cluster are orbiting the MBH in elliptical orbits.** According to my model, the MBH (and other Black Holes within the Shapley Super Cluster) are radiating very energetic gravity waves that extends out from the region of the MBH in all directions for more than 50 billion light years as shown on **FIG. 11** (attached). These gravity waves from the MBH and the rest of Shapley, I believe, provides a wonderful reference frame for the CMBR.

If we measure the speed of light from the Shapley Super Cluster; the **measured speed** (through a vacuum here on earth); will be the “speed of light” (about  $300 \times 10^6$  m/s). But its actual speed of light relative to the Shapley Super Cluster would be  $300 \times 10^6$  m/s plus  $13.357 \times 10^6$  m/s =  $313,357 \times 10^6$  m/s. We need to be careful when we talk about how fast light is moving. As I have explained, light speeds up or slows down so as the travel at the speed of light in whatever Coulomb grid it is traveling in. Light from Shapley has a **measured speed** in air or a vacuum equal to the speed of light (about 300 million meters per second), but the people measuring it are traveling at about  $13.357 \times 10^6$  m/s away from Shapley. So, the actual speed of our MWG relative to Shapley is about 300 million m/s plus 13.958 million m/s minus 0.6 million m/s or about 313.358 million m/s. The reason for the difference of 13.358 million meters per second is that the light from Shapley is speeded up and thereby stretched out and red-shifted while it is passing through Coulomb grid of the MWG, so that green light leaving Shapley’s stars is infrared light when we collect and analyze it in our telescopes, here on our earth or anywhere else in the Milky Way Galaxy. We also need to recognize that our earth has an orbit speed of about 30,000 m/s and a rotation speed of 460 m/s; so, we may need to account for those speeds to determine how fast a particular photon is really traveling relative to Shapley or any other far-away location. According to my model light, travels at the speed of light through a vacuum at the speed of light relative to the coulomb grid the light is also traveling through. Here on earth, we normally assume that our Coulomb grid is stationary, relative to our earth. So, apparently, the measured speed of light of a light beam is independent of the direction of the measured light beam. I understand that astronomers have measured the speed of light of a distant galaxy (NG-z11) receding from our MWG at a speed of about 12 times the speed of light. If the above analysis is correct and if an intelligent life form on a planet, similar to our earth, in that galaxy, right now, is measuring the speed of light in a vacuum on that planet, the measured speed should be about  $300 \times 10^6$  m/s.

### **WHAT HAPPENED TO ALL THEM NEUTRINO PHOTONS?**

#### **Why is Outer Space Filled with Hydrogen Atoms?**

I am told that there is at least about one proton or hydrogen atom in every cubic meter of the interstellar and inter galactic space of our Universe. That is a lot of protons and hydrogen atoms. Protons and

hydrogen atoms are consumed in stars in fusion processes to create heavier atoms and to provide the energy of galaxies. A question is where did all them protons and hydrogen atoms come from and why haven't most of them been consumed in stars?

Based on my assumption that the Monster Black Hole in the center of our Universe consumes portions of our Universe at a rate of one sun-size star per earth day and releases one neutrino photon for each proton or hydrogen atom consumed, I have calculated that the neutrino photons released from the Monster Black Hole is about  $1.1 \times 10^{57}$  neutrino photons per second. Based on my assumption that the Galactic Black Hole in the center of our Milky Way Galaxy consumes a portion of our galaxy at the rate of one earth-size planet per earth day, I have calculated that the neutrino photons released from the Milky Way Black Hole is about  $3.6 \times 10^{51}$  neutrino photons per second. If there are 400 billion galaxies in our Universe with, on the average, each consuming one sun-size star each earth-day, the number of neutrino photons released by all of these Black Holes would be about  $(3.6 \times 10^{51} \text{ np/s-galaxy}) \times (4 \times 10^{11} \text{ galaxies/universe}) = 14.4 \times 10^{62} \text{ np/second}$  for the galaxies in our Universe. This is  $14,400 \times 10^{60} \text{ np/s}$  (or 14,400 trillion-trillion-trillion-trillion np per second) produced in our Universe each second. Almost all of these neutrino photons will help provide the gravity that keeps our Universe operating, but as explained above the population of the neutrino entrons of these neutrino photons are not diminished in the course of providing gravity. They will continue flying around our Cosmos, mostly through our Universe until they are captured by an electron or a positron to become a very high-energy electron or positron spinning in a circle with a diameter of about  $0.85 \times 10^{-15}$  meter. Since, in our Universe free electrons greatly outnumber free positrons, almost all of the neutrino photons will be captured by electrons.

Many of the very high-energy, high-mass electrons will capture two positrons to become high-speed protons. Many of these high-speed protons will then capture 8.37 MeV of gamma ray entrons to become low-speed, high-energy protons each of which may capture an electron to become a low-speed high-energy hydrogen atom. These hydrogen atoms are the fuel that is used by stars in nuclear fusion processes to produce energy to operate our Universe and to manufacture all of the atoms of the Periodic Table and the Table of Isotopes.

Almost all of the positrons in our Universe are components or protons. My expectation is that the creation of **anti-protons** in our Universe by combinations of **positrons** and **neutrino photons released from Black Holes** is very small compared to the creation of **protons**. However, any anti-protons, which are so created, will be quickly annihilated by a combination with a proton releasing two neutrino photons. The situation is different inside of Black Holes where huge numbers of positrons are continually being released by the break-up of protons and where large numbers of proton-anti-proton annihilations are creating the gravity-carrying neutrino entrons and neutrino photons as described above.

**The bottom line is that the matter consumed by all of the Black Holes in our Universe is released from the Black Holes in the form of neutrino photons with just about the same mass as the matter consumed by the Black Holes.** Almost all of the mass of these neutrino photons will ultimately become the mass of protons and anti-protons. Some of these neutrino photons may participate in pair production processes. A result is that all of the galaxies in our Universe are extremely dynamic with lots of recycling going on. Most of the galaxies that orbit the Monster Black Hole in elliptical orbits probably have orbit periods of millions or billions of years. Most galaxies like our Milky Way Galaxy with **linear-pass-through orbits** probably have orbit cycles covering distances of many billion lightyears, such as about 200 billion lightyears with very long cycle times such as about 2 trillion earth years.

Protons and hydrogen atoms are therefore likely to come under the influence of the gravity of a nearby Black Hole, star, planet or moon. If the gravity is from a star, that proton or hydrogen atom in the star will become fusion fuel for the star and for the creation of alpha particles and fusion energy which will be released into interstellar space in the form of a wide spectrum of photons. Heavier atoms will be created in the three types of stars as described above. Energy is released in the form of high-energy photons as alpha particles are combined in the stars to create all of the atoms of the periodic table between, He-4 and Fe-56. Fe-56 and Ni-60 contain no significant energy in the form of high-energy neutrons. Atoms more massive than Ni-60 are created in supernova events with the gravitational collapse of large stars. The energy needed to produce the more massive atomic nuclei between Ni-60 and U-238 will come from the gravitational collapse utilizing the neutrons and alpha particles accumulated in the stars in the course of creating the nuclei between C-12 and Ni-60. Many stars, planets and moons will ultimately be consumed by Black Holes and most of their mass will be released from the Black Hole as neutrino photons. So, we could think of our Cosmos is a great recycling machine.

**My recognition that, the hydrogen atoms that populate the interstellar, intergalactic and (probably) inter-universe space, are produced from my gravity carrying God Particles are a Fifteenth reason why I should be awarded the Nobel Prize in Physics.**

### THE SPEED OF THINGS IN SPACE

#### The Speed of Light is Not a Limit

Albert Einstein and his followers have convinced most of us that nothing can travel faster than the speed of light. As a consequence, when we discovered that red-shifted light from some galaxies indicated that the light sources were traveling away from earth at eight or more times the speed of light, our scientists said that is impossible since that would mean Einstein's theories of relativity were incorrect. To avoid this result, some scientists suggested that the light sources were not traveling faster than the speed of light but instead the spaces between earth and the far-away galaxies were expanding faster than the speed of light; so, the very simple Doppler equation became very complicated. Hopefully, I am correct and everyone will recognize that space is "nothing" and "nothing" cannot expand or be expanded. And they should recognize that a thing (such as a galaxy) falling under the pull of gravity will increase its speed without limit until the thing is blocked or the thing arrives at or passes the source of the gravity. If the thing is not stopped by the source of the gravity, the thing should pass right through the region of the gravity source after which the gravity source should begin slowing down the thing. My Ross Model makes this possible, since I have shown that galaxies that are attracted for billions or trillions of years are billions or trillions of times larger than Monster Black Holes. Only a relatively few star systems are consumed by the MBHs. Therefore, when our Doppler data tells us that a galaxy is receding at 8 times the speed of light, is in all likelihood receding at 8 times the speed of light.

#### Muons

Hydrogen, protons, helium atoms and alpha particles, falling toward earth from inter-stellar space and inter-galactic space, enter earth's atmosphere at enormous speeds, many may be exceeding the speed of light. These particles will lose their electrons and the very high-speed protons and alpha particles will strip electrons from atoms in the earth's atmosphere. Many of the stripped electrons will be captured and later released by these particles. These electrons when released will be falling toward earth with very

high speeds, many faster than the speed of light. We call these high-speed electrons muons. Many of these muons survive the trip from earth's upper atmosphere to the surface of the earth and penetrate a variety of distances into the surface of our earth. (I have a theory that these muons create a significant flux of ultraviolet light, in the course of slowing down, permitting rats, mice or gophers and other creatures (including creatures living underground or at the bottom of the oceans) with ultraviolet vision to see in otherwise dark spaces (like rat-holes and the bottom of our oceans.) We know that rats and many deep-sea creatures have ultraviolet vision.

### My TinkertoY® Model of Our Universe

**FIG. 8B** shows my granddaughters, Jackie Ross and Anna Marie Ross, holding my TinkertoY® model of our Universe. Thirty TinkertoY®\_spools represent 14 example galaxies that have all passed through the region of space containing the MBH at the center of our Universe. Each of the 14 galaxies is spreading out from the MBH at a relatively constant speeds, but the spaces between the galaxies are continuously increasing simply because each of the galaxies are spreading out from the black hole that all of them have recently passed through. The lengths of the connecting Tinkertoy sticks correspond to the speeds of the 14 linear pass-through orbits receding in 14 different directions. The longer the sticks, the faster the speeds. The speeds of the 14 galaxies range from fractions of the speed of light to several times the speed of light, but the speeds of each particular galaxy are approximately constant for time intervals of many years. (For example, our Milky Way Galaxy is currently receding from the MBH at a speed close to 14 million meters per second and has been receding at about that speed for since astronomers first measured its speed more than 30 years ago. Each spool in each of the 14 orbits represents a position of a galaxy spreading out. Therefore, the **directions** of the lines of sight **between** far-away galaxies are constant so it is very easy for astronomers on each galaxy to track the other receding galaxies. This is also true for all galaxies that are approaching the MBH in linear pass-through orbits. **But the lines of sight between a receding galaxy and an approaching galaxy are not constant.** The FIG. 13 graphic model explains why, if a person "A" on any linear pass-through galaxy (such as our MWG) who is looking through a telescope at any other linear pass-through galaxy that is receding from our MBH; the person A will see the other linear pass-through galaxy moving directly away from the person "A". That would not mean that the universe is expanding. It just means that both galaxies are moving directly away from the same MBH in the center of our universe. Both galaxies will head approximately directly back toward the MBH in the center of the universe after they respectively reach their turn-around point. Two galaxies, **both approaching the same MBH** under the gravity of the MBH will also define a **line-of-sight direction** between them that is approximately constant. Astronomers on one approaching galaxy measuring the speed of another galaxy approaching galaxy may think that space between the galaxies is shrinking, but that won't be the case either. It just means that the people on both galaxies need to think about how much time they have before pass-through.

Readers may notice that the TinkertoY model and FIG. 13 can be viewed in reverse This may help convince you that **during the period after turn around** when these same galaxies are all heading back toward the same black hole, the lines of sight between the galaxies will again be constant; so, tracking other neighboring galaxies should again be easy. Some scientist far into our future may think space is shrinking, but they will be wrong.

## DARK MATTER AND DARK ENERGY

Existing models of the Cosmos recognize that our Universe and the Cosmos is full of dark energy and dark matter. But these existing models don't know what the dark matter and dark energy is. My God Particles, the neutrino entron and the neutrino photon, are the dark matter and the dark energy of the Cosmos. Neutrino entrons provide almost all of the mass of every proton and (because the proton provides almost all of the mass of alpha particles and (indirectly) the rest of the mass of all of the atoms of the periodic table and the Table of Isotopes. Protons are broken down in Black Holes to release the neutrino entrons as neutrino photons to provide the gravity of universes and galaxies. The neutrino photons cannot be seen or otherwise detected so they are "dark" and they are everywhere in the Cosmos. As suggested above, neutrino photons are spread through the Cosmos in the form of gravity, but sooner or later the neutrino entron of almost all neutrino photon will manage to be captured by an electron and become a part of a proton and a hydrogen atom, many of which are consumed in stars to form more massive atoms and produce energy in the form of entrons and photons to help perpetuate the universes.

**My explanation that my God Particles, the Neutrino Photons and the Neutrino Entrons, provide the of Dark Energy and Dark Matter of the Cosmos is a Sixteenth reason why I should be awarded a Nobel Prize in Physics.**

### GALACTIC TURN AROUND

The gravity from our MBH will continue to decrease with distance of our MWG from the MBH, but the gravity will never decrease to zero; so (unless our Milky Way Galaxy and its associated galaxies in our Local Group of galaxies become subjected to a significant external force) the MBH gravity will continue to slow down the recession of our MWG and its associated galaxies until the recession speeds have been slowed down to zero. And after that, our MWG and its associated galaxies will experience a long free-fall toward the MBH and the speeds of the galaxies will be increased each second for many billion years until the galaxies have passed back through the region of the MBH. I believe that our MBH is located the center of the Shapley Super Cluster of galaxies and I estimate the distance between the turn-around location and MBH within Shapley could be about 50 billion lightyears. The speed of at least portions of some of these galaxies when they reach the region of the MBH could be far in excess of the speed of light. We can ask, "How long did it take for the Milky Way to pass through Shapley and how long will it take during the next passage?". The answer is, the pass-through speed depends on how close to the MBH are the stars, planets and moons are during the pass-through. (At zero distance the stars, planets and moons are consumed by the MBH. At distance just beyond the radius of the MBH the pass-through speeds could be many times the speed of light. Stars, planets and moons located near the edges of the galaxies will be located many lightyears from the MBH during pass-through and their pass-through speeds will be not much faster than about 14 million meters per second.) The thickness of the Shapley Super Cluster is roughly about 120 lightyears. At an average speed of about  $3c$ , the time for portions of the MWG to pass completely through Shapley would be more than about 40 earth years. My estimate of the diameter of the MBH itself is probably less than 260 billion ( $2.6 \times 10^{11}$ ) meters and I estimate the diameter of the Milky Way Black Hole is about 540 million ( $5.4 \times 10^8$ ) meters and the diameters of the Galactic Black Holes of Shapley galaxies are also relatively small; so, collisions of **Black Holes** during transit of our MWG will be extremely unlikely; so, nearly all of our MWG will probably pass through the region of the MBH and continue on in the same direction. I estimate the average speed of the star systems of our MWG may be about  $3c$ . The star systems of our MWG will be slowed down on the way out of Shapley Black Hole by about the same amount

that they will be speeded up on the way in. So, the average speed of our MWG leaving Shapley will probably be about the same as its average speed coming in. My understanding is that speed of our MWG at 650 light years from the MBH is now about 14 million meters per second. Therefore, I am estimating that the speed of our MWG at  $650 \times 10^6$  lightyears heading in toward the MBH was about the same as the current speed of our MWG at  $650 \times 10^6$  lightyears speeding away from the center of our Universe, i.e., about 14 million meters per second, all as shown on FIG. 12. On pages 90 I have estimated the speeds of our MWG during the portion of its trip through the region of the MBH at the center of our Universe (i.e., from  $650 \times 10^6$  lightyears before pass-through to pass-through).

**My explanation of gravity provided by the God Particles (neutrino entrons and neutrino photons) which are produced in Galactic and Universe Black Holes is a Seventeenth reason why I should be awarded a Nobel Prize in Physic.**

### THE COSMOS - UNIVERSES AND FILAMENTS

#### **Basic Features of the John Ross Model of the Cosmos**

To understand Universes and Filaments, readers first need to understand that most of the basic features of the Standard Model, Einstein Relativity and Quantum Mechanics are incorrect, and you need to understand my Ross Model. You can GOOGLE my 2 ½ lecture. Search “Ross Model of the Universe”; click “Ross Model of the Cosmos” when it appears on your screen. Or, I have provided below a very quick summary of my John Ross Model:

Everything in the Cosmos is comprised of **Tronnies** which are point particles with a charge of plus or minus e. They are each one half of a point in empty space. (I do not know how these points became divided, but they did. Everything in the Cosmos is made of nothing but these plus and minus tronnies, except for the mass of electrons and positrons (each of which are three tronnies). Specifically:

- The **entron** is two **tronnies** traveling in a perfect circle at a speed of  $\pi c/2$  with diameters ranging 18 orders of magnitude **from  $0.9339 \times 10^{-18}$  m to more than 1 meter**. Entrons represent all of the mass of the Cosmos (except for the mass of naked electrons and positrons) and all of the energy of the Cosmos except for kinetic energy.
- Every **photon** in the Cosmos is an **entron** traveling in a perfect circle at a speed of  $2c$  and forward at a speed of  $c$ .
- The smallest entron is the **neutrino entron** which has a diameter of  $0.9339 \times 10^{-18}$  m, a mass of about  $1.65 \times 10^{-27}$  kg and an energy of 928 MeV. Its photon is the **neutrino photon** which carries the **gravity** of the **Cosmos**. These particles are the **God Particles**.
- **Pair Production** is a combination of the **entrons** of **three photons** (the **928 MeV** neutrino photon, the **1.02 MeV** gamma-ray photon and the **1.12 KeV** ultra-violet photon) to make an **electron** and a **positron**. The combination of an electron and a positron annihilates both of them and produces **two 0.51 MeV photons** (which are detected) and a **928 MeV neutrino photon** (which is not detected) .

- A **proton** is an electron (that has captured a neutrino entron with a mass of about  $1.65 \times 10^{-27}$  kg) and two positrons. An anti-proton is the the proton's anti-particle.
- The **alpha particle** is a combination of four protons circling with a speed of  $\pi c/4$  and two electrons circling through the center of the proton circle perpendicular to the path of the four protons. The two electrons circle (1) the path of the protons, (2) 90 degrees ahead of another one of the protons (3) 90 degrees behind and ahead of each of the protons and (4) 180 degrees behind and ahead of the other proton. Alpha particles with a charge of plus 2 are attracted to each other at nuclear distances (about  $10^{-15}$  m) but repel each other at all other distances. Alpha particles are created in stars by the fusion of hydrogen.
- The **nuclei of all of the stable isotopes** in the periodic table are combination of up to 59 alpha particles, up to 3 protons and up to 26 electrons. There are **no neutrons** in any stable isotope. Click on "news" at tronnies.com and search for "Ross Model Stable Isotope Chart".
- I define the "**Cosmos**" as everything that currently exists, has existed in the past and will exist in the future forever. And I have defined "**our Universe**" as the collection of galaxies and galaxies clusters under the control of a **Monster Black Hole (MBH)** at the center of **our Universe**. And I have explained, that my Ross Model proposes that there **many universes** in the **Cosmos** each with at least one **MBH** at the center of each **universe** in the **Cosmos** with each **MBH** providing gravitation control of all of the **galaxies** within its **universe**.
- I define **our Universe** as the universe we live in. According to my model there are several hundred galaxies in **our Universe** most of which orbit a **MBH** in linear pass-through orbits, almost half of which are currently receding from the **MBH** and almost half of which are currently approaching it.

### The Cosmos

FIG. 14 is a sketch of what I imagine is a **typical 500 square trillion lightyear slice of the Cosmos**. This slice includes our Universe which I picture as an approximately spherical universe (pictured as a circle) with a diameter of about 100 billion lightyears. The slice also includes about 100 other Universes with diameters ranging from about 50 billion lightyears to about 200 billion lightyears. The number of universes in the Cosmos is unknown. All of the universes include one Monster Black Hole located at the Universes' centers. Each of the Universes include about fifty billion to about one trillion galaxies, almost all of which are orbiting the MBH at the center of each universe in **linear pass-through orbits** to give each of the universes a generally spherical shape. Astronomers report that our Universe includes about 100 to 400 billion galaxies. (I estimate that our Universe includes about one million galaxies including the galaxies that are approaching the MBH at the center of our Universe.)

And I have explained, my John Ross Model proposes that there are a very large number of **universes** in the **Cosmos** all (or almost all) universes includes one **MBH** at the centers, with each **MBH** providing gravitational control of all of the **galaxies** within its **universe**. Each **galaxy** in each **universe** has a **Galactic Black Hole (GBH)** providing gravitational control of all of the **star systems** in each of the **galaxy**. All of the **gravity** in the **Cosmos** is produced in **Black Holes** (i.e., **MBHs** and **GBHs**) via proton-anti-proton annihilation; with each annihilation releasing two neutrino entrons, one of which remains in the **Black Hole** to help create another anti-proton and the other neutrino entron is released through the surface of

the **Black Hole** as a neutrino photon to provide the gravity of the **Black Hole**. Stars, planets and moons get their gravity, second hand from the **Black Holes**. Neutrino photons released through the surfaces of each **Black Hole** travel through the **Cosmos** at speed of light illuminating everything within the gravitational range of the **Black Hole**. I estimate the mean-free paths of neutrino photons within stars, planets and moons as about 7 million meters. All photons (including the neutrino photons) travel forward at the speed of light, while their entrons (including their neutrino entrons) travel in perfect circles at twice the speed of light. (Entrons must always travel in perfect circles at  $2c$ ; because each of its two tronniees are attracting each other at the speed of light while circling at a speed of  $\pi c/2$  and each of its two tronniees must stay immediately ahead of their own Coulomb forces that are traveling at a speed of  $c$ .) So, during each wavelength of the photon, the entron travels in the forward direction at speeds ranging between minus  $c$  to plus  $3c$ . The nice result is that once during each wavelength of each photon in the Cosmos (including the neutrino photon) its entron must be traveling **backwards** at exactly the speed of light in a direction toward the source of the photon. The neutrino photon's Coulomb forces are most effective when its neutrino entron is traveling at, or almost at, the same speed as the Coulomb forces of each of the tronniees in the neutrino entron. **This is how gravity works.**

The MBH of our Universe is providing gravitational control with its neutrino photons of all of the galaxies of our Universe. The MBH of our Universe may be located at the center of the Shapley Super Cluster. Some of these galaxies in our universe are in all likelihood currently orbiting the MBH in elliptical or circular orbits, but as I believe and have explained, most of the galaxies in our Universe, including our MWG, orbit the MBH in "linear pass-through orbits". Most of these Linear pass-through galaxies oscillate through the region of the MBH with periods of many billions or trillions earth years covering distances of about two billion lightyears per orbit cycle. At least a portion of many of the galaxies of our Universe pass through the region of our MBH mostly at speeds far exceeding the speed of light. But (after passage), the galaxies are continuously slowed down by the gravity of the MBH. The portion that passes through the fastest will, after passage, be slowed down the most, so after a few billion years after passage the shapes to the galaxies leaving the region of the MBH will be close to the shapes the galaxy had on the way coming in. For our MWG the trip between the region of the MBH to the edge of our Universe will be a long one. When the MWG has slowed down to zero, it will begin its free-fall back toward the MBH for another many billions or trillions of earth years to pass again through the region of the MBH. The various star systems of the MWG will pass through the region of the MBH at a variety of speeds similar to the speeds of the MWG's previous passage. After passage through the region our Galaxy will head out toward the opposite edge of our Universe as indicated In FIG. 11. If this cycle works for the galaxies of our Universe, it should work for the galaxies of other universes in the Cosmos. I believe there are very many other universes in the Cosmos similar our Universe, but that has yet to be proved. Anyhow, an important component of my Ross Model of the Cosmos is many separate universes. I am not aware of any definite reports of universes other than ours. However, I will be very surprised if there are not a great many parallel universes, each with their own MBH and set of linear pass-through galaxies. And as explain below, I believe that many of the very far-away "filaments" that our astronomers are observing are galaxies of universes separate from our Universe.

According to my model, the Black Holes of our Universe (the MBH and the GBHs) produce energy mostly in the form of neutrino photons which are radiated out of the Black Holes in an amount equivalent (or approximately equivalent) to the mass consumed by the Black Holes. And these neutrino photons radiated out from the Black Holes, in addition to providing gravity of the universe, are captured by



electrons to form high-energy electrons that capture two positrons to form hydrogen atoms that collect in hydrogen clouds and that after many years, develop into stars and galaxies. And those hydrogen atoms are combined in stars in fusion processes to make alpha particles that are the primary building blocks of all of the isotopes in the Table of Isotopes. This looks like a perfect recycling system that could exist forever as I have indicated above. Thus, my model supports the concept of a dynamic, recycling, steady-state or approximately steady-state Cosmos.

### **Expanding Space?**

On the issue of a likelihood of “expanding space”, readers are encouraged to study my **FIG. 12** that is attached. In this drawing I explain why most people (including, I believe, most scientist) **incorrectly** believe that space is expanding. In FIG. 12, I show the current position of our Milky Way Galaxy at 650 million lightyears from the MBH, assuming it has passed through the region of the MBH at the center of our Universe at a high speed and is gradually being slowed down by the gravity waves of the MBH of our Universe. I believe it will be slowed down to approximately zero speed after receding for a distance of about 50 billion lightyears. In FIG. 12 I also show the paths of Galaxies A, Galaxy B and Galaxy C that also passed through the region of the MBH at about the same speed as our Milky Way Galaxy. And I show the path of Galaxy D that passed through the region of the MBH at a speed that is less than one half the speeds the other four galaxies. Then I have shown on FIG. 13 the lines of sight from our Milky Way Galaxy to Galaxies A, B, C and D at five occasions during the 650 million lightyear path of our Milky Way path from its passage through the region of the MBH. Please note that the direction of the line-of-sight from our Milky Way Galaxy to the other four galaxies does not change significantly as long as the galaxies are all receding from the center of our Universe. However, the distance the light has to travel between the galaxies increases continuously even though the galaxies are all continuously slowing down due to the gravity from the MBH. Most writers discussing the movements of galaxies attempt to explain that space between galaxies is expanding. **Space is nothing. Space is not expanding.** The **receding galaxies** are continuously getting farther away from each other because they all passed through the same location (the center of our Universe) and each galaxy headed off from that single location separately in different radial directions. It is true that **distance** between receding galaxies is expanding because all of the receding galaxies are receding in different radial directions through **space** from the same location (i.e., the MBH) but **space itself, is not expanding!** Please note that I have shown galaxies A, B, and C traveling at the same speed as the Milky Way but in different directions. The lengths of the lines of sight are continuously increasing in length, but the directions of the lines of sight are constant. I have shown the speed of galaxy D traveling at about half the speed of the other four galaxies, but the directions of the lines of sight between the MWG and galaxy D also do not change and the lengths of the lines of sight also increase continuously. Also, you, the reader, may ask, what about a galaxy that has passed through the region of the MBH at an earlier or later time. I think you will convince yourself that that that the direction of a line of sight, from our MWG to the galaxy will be constant and that the distance to it will be continuously increasing which could cause people to incorrectly believe that space is expanding.

### **The Size of Each Universe is Limited**

Another important feature of our Universe expressed by FIGS. 11 through 14 is that our Universe (and all other universes) is that all universes are limited in size. The gravity (of the gravity waves of the MBH at the center of each universe) continues to decrease as the waves expand; but each receding galaxy leaves the region of the MBH with a limited amount of kinetic energy. And the gravity of the MBH will continuously

slow down the receding galaxy. Therefore, most if not all galaxies will run out of kinetic energy, before they are beyond the effective range of the gravity waves of the MBH. So, like the mass in the pendulum, they will slow down to zero and head back toward the MBH for another cycle. Also, as indicated in FIG. 14, my John Ross Model of the Cosmos, proposes a Cosmos with a great many universes, each with a MBH at its center; so that, if, in a particular situation, a single galaxy has enough kinetic energy to escape its MBH, one or more MBHs of a surrounding universe will provide gravitational forces to adopt the galaxy. A result is that a galaxy of one Universe that somehow is able to accumulate an unusual amount of kinetic energy may find itself under the gravitational control of a neighbor universe.

### **Filaments**

In this connection, let me write a few more words about filaments and the likelihood of many separate universes. I have learned recently that when astronomers, with their long-distance telescopes search for **very far-away galaxies**, they record images of celestial structures that astronomers call “filaments”. The filaments appear to be “thread-like formations with typical lengths of 200 to 500 light-years, with sizes between about 100 thousand lightyears to a few billion lightyears. They were first discovered in the late 1980’s. They have names, for example, ‘CfA2 Great Wall”, “Sloan Great Wall”, “Huge-LQG”, and “Hercules-Corona Borealis Great Wall’. Readers who are not familiar with these structures may want to GOOGLE these names. Filaments are believed by scientists to consist of gravitationally-bound galaxies, most or all of which appear to contain at least one Black Hole. My guess is that “filaments” is not a good name for these structures. They probably are galaxies. Some may be galaxies that are suspended between universes. Some may be galaxies that are directed toward our MBH. Some may be galaxies of other universes.

My definition of a **universe** as I have explained several times, is **those very far away galaxies** that are under the gravitational control of the Monster Black Hole at the center of **the particular Universe**. I have a feeling that many of the galactic filaments are not under the control of our MBH. First, I have seen no suggestion that the galaxies of the above filaments are receding from our Monster Black Hole at the center of our Universe. Second, from the information that I have, the galaxies of these filaments do not appear to remain at the same line of sight for long periods of time as do the receding galaxies of our Universe as described in my FIG. 13, so smeared images of the galaxies in the filaments appear as “filaments” instead points in space. If the direction to a particular far-away galaxy is changing while the light is being collected the image of a system of galaxies will be smeared and appear as filaments. As FIG. 13 and FIG. 8B make clear, the line of sight between far-away galaxies **receding** from the center of **our Universe** remain constant for very long periods of time. This would not be true for galaxies of a different Universe or galaxies of our Universe **that are approaching the center of our Universe**.

### **WHY DON'T WE SEE GALAXIES FALLING TOWARD OUR MBH?**

So, we need to answer the question: “Why haven’t we seen strong evidence of galaxies incoming toward the Monster Black Hole at the center of our Universe?” We see strong evidence of somewhere between 100 to 400 billion galaxies receding at high speeds from the center of our Universe. If my theory is correct as suggested in FIGS. 11 through 14, then the number of galaxies incoming toward our MBH should be approximately equal to the number of galaxies receding from the MBH. Also, galaxy speeds incoming should be approximately opposite to the receding speeds as suggested by FIGS. 11 through 14.

I believe the reason why we do not see good evidence of galaxies falling toward our MBH may be that:

- 1) they are very far away from us, so they are difficult to see for that reason, and
- 2) the direction to them keeps changing since they are moving in directions other than radially away from our MBH, so, the galaxies appear as streaks (or filaments) instead of spots (just as background stars appear as streaks when the telescope and camera is tracking a low-orbit satellite).

### **ALBERT EINSTEIN WAS WRONG**

So, about 100 years after Albert Einstein convinced most of the science community that large masses created a curvature in space (like a bowling ball causes a curvature of the canvass of a trampoline); we now, finally, know the truth. Gravity is **NOT** a result of a curvature of space. Gravity is the result of speed of light **neutrino photons** produced by:

- (1) **Galactic Black Holes** at the center of galaxies by the consumption of galactic matter by the galactic **Black Holes** and
- (2) **Monster Black Holes** at the center of universes by the consumption of universe matter by the **Monster Black Holes**.

These neutrino photons are released through the surfaces of the Galactic Black Holes in each galaxy and the Monster Black Holes at the center of universes that illuminate everything in each of the galaxies in the universe and in each universe in the Cosmos. Stars, planets and large moons capture all, or almost all, of the neutrino photons that illuminate the stars, planets and large moons. These neutrino photons accumulate in the stars, planets and large moons as neutrino photons or neutrino entrans which are later released from the surfaces of the stars, planets and large moons as neutrino photons (as described above) to produce the gravity of the stars, planets and large moons. Albert Einstein became famous when he made a prediction that deflection of starlight by our sun during a 1919 solar eclipse would be twice as great as that predicted by Isaac Newton's gravity equation. Einstein needed for space to curve since he did not believe photons have mass. My Ross Model proposes that all photons have the mass as shown by the examples in Table A on page 7. My Ross Model proposes that photons passing close to the surfaces on **the sun and the moon** were **curved by the second-hand gravity of the sun and the moon** during the 1919 solar eclipse. The Ross Model proposes that our sun, our earth and our moon get almost all of their gravity first hand, second hand, or third hand from the same place; i.e., the MBH at the center of our galaxy. Most of same photons in 1990 that were curved by the second-hand gravity of the sun were also curved by the second-hand gravity of the moon. The surface gravity of the moon is probably not as great as the surface gravity of our sun and our earth since the size of the moon may be less than the mean free path of neutrino entrans in the moon. See the next three sections

### **Einstein Relativity vs Ross Model**

Einstein Relativity:

- 1) Mass increases with speed.
- 2) Time slows down at high speed.
- 3) Nothing can exceed the speed of light.
- 4) We live in a space-time continuum.
- 5) Space is curved by large masses.
- 6) Photons are massless.

Ross Model:

- 1) Mass is not increased with speed.
- 2) Time passes at the exact same rate everywhere in the Cosmos, regardless of speed.
- 3) Tronnies, entrons in photons, and electrons and positrons in protons exceed the speed of light. Electrons in alpha particles exceed the speed of light. At least a portion of many galaxies are receding from our MWG faster than the speed of light.
- 4) Space and time are completely separate concepts.
- 5) Space is nothing it cannot be curved.
- 6) Every photon in the Cosmos has a mass corresponding to its energy.

### **Gravitational Deflection of Light**

Recently, in 2018, an ex-co-worker of mine, Dr. Donald Bruns, has become semi-famous for making the most precise measurement ever of the gravitational deflection of light by our sun during the 21 August 2017 solar eclipse. (See Dr. Bruns's paper published by Classical and Quantum Gravity, IPO Publishing (Class Quantum Grav (2018) 075009(21pp)). This paper is available at university libraries and on the Internet. The result was a deflection coefficient  $L = 1.7512$  arcsec (0.000486 degree) in substantially perfect agreement with Albert Einstein's theoretical value, with a statistical uncertainty of only 3%. This value of the deflection is twice the value of the theoretical value of the deflection coefficient calculated according to Isaac Newton's gravitational formula, which was a deflection coefficient of  $L = 0.875$  arcsec (0.000243 degree). Albert Einstein's prediction of the doubled deflection coefficient (i.e.,  $L = 1.7512$  arcsec) was made just prior the Sir Author Eddington's famous measurement in 1919. I understand that earlier Einstein, himself had predicted that the deflection would be in accordance with Newton's theory (i.e.,  $L =$  about 0.875 arcsec.). In any event Einstein's revised prediction turned Albert Einstein into a scientific celebrity and set science off in several horribly incorrect directions, at least in accordance with my model of the Cosmos. Some of his erroneous ideas are listed in the above section with specific comparisons with my concepts from my model of the Cosmos.

### **Is the Sun Deflection Doubled During a Solar Eclipse?**

Even today, 99 years after Sir Eddington's measurement, there is no good generally accepted logical explanation as to why the deflection of light by the sun should be twice the deflection predicted by Newton's equation. (My understanding is that Professor Einstein once explained that half of the measured deflection is due to Newton's gravity and half is due to his curvature of space.) Pursuant to my model of the Cosmos, almost all of the gravity of all large spherical celestial bodies in the Solar System including our sun, our earth and our moon is determined by neutrino photon illumination received by and accumulated in the celestial bodies directly or indirectly from the Black Hole at the center of the Milky Way Galaxy.

Specifically, our sun and our moon (as well as our earth) receive almost the same neutrino photon flux directly from our MWG Black Hole; and as explained above, I have shown that second-hand neutrino photon flux received by our sun and the planets and moons of our Solar System from other sources is insignificant as compared to the neutrino flux received directly from our galactic Black Hole. I have also shown above that the neutrino photon flux radiated out from the surface of sufficiently large spherical bodies is about one-fourth of the neutrino photon flux illuminating these large spherical bodies. This is true only if the size of the celestial body is much larger than the mean free path of neutrino photons in the celestial body. **Therefore, photons passing near the surface of our moon are deflected by the moon's**

**gravity to the same extent as the deflection of photons passing near the surface of the sun only to the extent that the mean-free path of neutrino photons in the moon is small compared to the size of the moon.** If that is not true then the moon's surface gravity would be less than the surface gravity of the sun and our earth. (Someone needs to do some math to determine how much less.) As explained above, I have guessed that the mean-free path of neutrino photons in our moon is about twice the diameter of the moon. While our astronauts were on the moon, they could have easily measured the surface gravity and they may have done so. But I have seen no evidence of such measurement. Also, next time we have astronauts on the moon we should get them to measure the deflection of starlight passing close to **our sun and our earth** during an **eclipse of the sun by our earth**. It should be twice Newton's estimated deflection.

### **COSMIC MICROWAVE BACKGROUND RADIATION**

The Cosmic Microwave Background Radiation (CMBR) that we record with our telescopes is the light from all of the stars in the Cosmos. And the light from these stars is red-shifted, from their emit wavelengths peaking at about  $5.42 \times 10^{-7}$  m (green light) to the peak received CMBR wavelengths that we measure at about  $5.28 \times 10^{-3}$  m. The emit wavelengths of  $5.42 \times 10^{-7}$  m which is equivalent to a frequency ( $f_s$ ) of  **$5.535 \times 10^{14}$  cy/s** and an energy of about  $2.35 \times 10^{-4}$  eV. The receive wavelengths are red-shifted about four orders of magnitude to about  $5.28 \times 10^{-3}$  m which is equivalent to a frequency ( $f_r$ ) of  **$5.682 \times 10^{10}$  cy/s**. The following formula is used to determine the velocity of a receding light source from frequency shift from the receding source,  $s$ , at frequency  $f_s$  and the frequency recorded by a stationary receiver  $f_r$ :

$$f_r = (c/c+v_s)(f_s). \text{ So: } ((c+ v_s) = (f_s/f_r)c \text{ and}$$

$$v_s = c(f_s/f_r) - c = 5.535 \times 10^{14} c / 5.682 \times 10^{10} - c = 9,740c - c = 9,739c$$

**$9,739c = 29,217 \times 10^8$  meters/second = more than 2.9 trillion meters per second.**

Below beginning on page 90, I try to estimate the speed of stars in the process of falling into a black hole at the center of our Universe. I conclude that speeds much faster than the speed of are possible; but I do not believe we can explain the CMBR based on recession speeds of galaxies. Most very far-away galaxies that we can see with our telescopes are exceeding the speed of light. And as I have just suggested, many of them are receding at speeds of several times the speed of light. In fact, scientist tell us that the farther away galaxies are, the faster they are receding. This is not because space is expanding. As I have said, space in nothing. It can't expand. I am not certain why the cosmic background radiation is so red shifted. There could be many reasons. Much of the CMBR probably has come from surrounding universes about which we know very little. Light with very long wavelengths is less likely to be absorbed than light with shorter wavelengths. Photons can lose energy interacting with small particles. Most of the photons of the CMBR have probable been bouncing around the Cosmos for many billions or trillions of earth years. Photons could lose or gain energy with each interaction. For the time being I consider the CMBR a well-known mystery.

### **WHAT IS A UNIVERSE?**

The reader is warned that this section is repeat in part of a lot of what has been covered above. Earlier today as I write this section, by Googling "Universe", I learned again that there is no clear agreement as to what "science" means by the word "universe" or the phrase "our Universe". Several times in this paper, I have described what I mean by the phrase "our Universe" and the word "universe". I define "universe" as a collection of galaxies under the gravitational attraction of a "Monster Black Hole" that exists in the

center of “the universe”. And I define “our Universe” is the universe we live in and it is under the gravitational control of the Monster Black Hole in the center “our Universe”. Making this distinction between our Universe and other universes greatly simplifies things. Actually, at least theoretically the gravity of our MBH could extend forever. But at very large distances from our MBH, the gravity of our MBH becomes very insignificant as compared to the gravity of other sources such as gravity of far-away MBHs, as indicated in my FIG. 14. As indicated above I believe there are very many other universes that have our Universe completely surrounded so that gravity of the MBHs of surrounding universes will be in control the space beyond about 50 billion lightyears from our MBH. My estimate of about 50 billion light years results from my understanding that we can image with our best telescopes, galaxies that are about 50 billion lightyears from our galaxy. My understanding is that our modern telescopes detect light coming from distances beyond 50 billion lightyears, but that light does not appear to be coming from galaxies of the type that we have been able to image. My belief is that the source of this light is galaxies that are not receding from our MBH.

In FIGS. 11 I show gravitational waves extending out more than 50 billion light years from the MBH at the center of our Universe. According to my model the MBH of our Universe has to be at the center of our Universe. (I am not certain where, exactly, the MBH is located. I am currently assuming it is within the Shapley Super Cluster, maybe within a particular enormous galaxy within the Shapley Super Cluster that has been named ESO444-46. This galaxy has a diameter larger than 340 thousand lightyears.)

These waves are produced by neutrino photons released from our MBH. As explained beginning on page 45, I estimate the neutrino photon flux in these waves by assuming that the MBH at the center of our Universe consumes matter at the rate of one sun-size star per earth day. This corresponding neutrino photon flux is about 23 neutrino photons per second per meter squared ( $23 \text{ np/s-m}^2$ ) at the position of our earth today but the flux will decrease to about  $0.004 \text{ np/s-m}^2$  when our MWG is located about 50 billion lightyears from the MBH at the center of our Universe.

Another important consideration (when we recognize that there are many universes in our Cosmos) has to do with what are the boundaries of the universes. I assume that the great majority of the galaxies of all of the universes will be linear pass-through galaxies. Each galaxy in linear pass-through orbits will have their maximum speed through the regions of the MBH and they slow down after they pass through the regions of the MBHs. If a galaxy passes through the region of its MBH at a relatively low speed it may be slowed down to zero speed before it comes under the gravitational influence of the MBH of a surrounding MBH. In that case it will merely begin its turnaround and head back toward its MBH. However, if a galaxy of a first universe at an unusually high speed, the gravity of its MBH may be insufficient to slow it down to zero before it comes under the influence of the gravity of the MBH of a surrounding universe. In this case the galaxy may be captured by the MBH of the surrounding universe. For these reasons, I believe that the many universes of the Cosmos are continually competing for galaxies. And the result, over billions and trillions of years, the MBHs of the Cosmos develop territories and are continuously in competition to maintain their territories and increase their territories if they can! All of this is natural. The result is governed by physics. Who knows, some day when our MWG has receded from Shapley a distance of about 50 billion lightyears, our MWG could be caught in a tough-of-war between the Black Hole of our Universe and the Black Hole of a surrounding universe.

## TRAVELS OF OUR MILKY WAY GALAXY

Now I would like to speculate specifically as to the past, recent and future travels of our Milky Way Galaxy. As I have indicated above, my current view of our Universe is that most of the galaxies of our Universe orbit the Monster Black Hole at the center of our Universe in “linear-pass-through orbits”. I have guessed that the distance of a full-cycle, linear pass-through path of our MWG is about 200 billion lightyears (about  $2 \times 10^{27}$  meters) including four 50-billion lightyear segments: (1) a gravitational free-fall from a first edge of our Universe to the MBH, (2) coasting to the opposite edge of our Universe, (3) a free-fall back to the MBH and (4) coasting back to the first edge of our Universe. (To make things simple, I will assume that the **average speed** during all four segments is equal to our current speed of about 14 million meters per second. If that is close to correct, a complete cycle of our MWG would take about  $2 \times 10^{27} \text{m} / 14 \times 10^6 \text{m/s} = \text{about } 1.4 \times 10^{20} \text{ seconds} = \text{about } 4.4 \text{ trillion years}$  (since there are about  $3.154 \times 10^7$  seconds per year) or about 1.1 trillion years per each 50-billion lightyear segment of the trip.

As described in FIG. 13 all galaxies that are receding from the MBH in our Universe in linear-pass-through orbits will always be located on a relatively constant line of sight from our MWG and from all other galaxies receding from the MBH in linear pass-through orbits; so, all receding galaxies are relatively easy to image from all other receding galaxies.. This is because their position in space will not appear to change over substantial periods of time. FIG. 7B is a photograph of my Tinkertoy® model of our Universe. It is under the control of my granddaughters Jackie and Anna Marie. All of these galaxies appear to be continually expanding approximately directly away from each other, **giving the false impression that the space between the galaxies is expanding**; when, in fact, each galaxy that is easily tracked from our MWG is merely receding directly away from the MBH in the center of our Universe in a linear-pass-through orbit. And, according to my theory, each galaxy during each complete cycle through the region of the MBH spends an approximately equal amount of time approaching the MBH as it does when it is receding from the MBH. If my theory is correct, our astronomers should be able to detect galaxies approaching the MBH, if they can figure out how to control their telescopes to track them. First, they need to understand that about half of the galaxies of our Universe are currently approaching the MBH at the center of our Universe.

I have suggested and I have assumed that the MBH of our Universe may be located at the center of the Shapley Super Cluster, and that most of the galaxies in our Universe orbit the MBH in linear pass-through orbit. However, the Shapley Super Cluster is a super cluster of galaxies. These galaxies in the SSC are in all likelihood orbiting the MBH in elliptical orbits around the MBH.

## WHEN OUR MWG TRANSITED THE REGION OF OUR MBH?

By monitoring light from far-away galaxies that are receding away from our MBH, scientists can determine the **speed and distance to the far-away galaxies**. They have thus established a constant called the “Hubble Constant”. The value of this constant contains some uncertainty but most estimates fall within a range of about 70 km/s)/Mpc (+/- 4 km/s/Mpc). I have explained below, I believe the MBH at the center of our Universe is located within the Shapley Supper Cluster of galaxies. This may or may not be the case. As indicated in **FIG. 12** our MWG is currently located at about 650 million lightyears from the MBH in the center of our Universe and is **receding from our MBH** at a speed of about **14 million meters per second** ( $14 \times 10^6 \text{ m/s}$ ). I also understand that the recession speed is currently decreasing at the rate of about  $0.6 \times 10^6 \text{ m/s}$ . I do not know the time over which this this rate will apply. I do assume that the rate of decrease will decrease as our MWG gets further away from the MBH. And the rate of decrease

will be zero at the turn-around location which I am guessing is about 50 billion lightyears from the MBH. Based on my linear pass-through model of galactic orbits, speeds of galaxies receding from the region of Monster Black Holes must be an approximate mirror image of their speeds approaching the region of the MBHs. My model also suggests that the time since our MWG passed through the region of the MBH is the same as the time since the fictional **BIG Bang** occurred according to the incorrect **Big Bang Theory** (i.e., about 13.75 billion years ago). This would mean that about 27.5 billion years ago (i.e.,  $2 \times 13.75 \times 10^9$  years), our MWG was located about 650 million lightyears from the MBH in the center of our Universe. And our MWG was **approaching the MBH** at a speed of about  $13.4 \times 10^6$  m/s increasing in speed at about  $0.6 \times 10^6$  m/s. So, I think we can also speculate that about 13.75 billion years ago, our MWG was passing through the region of the MBH at the center of our Universe (with only a very small portion of our MWG being consumed by the MBH). I think we can also take a guess that about 27.5 years ago our MWG was approaching our MBH at a speed of about  $14 \times 10^6$  m/s. A much more difficult calculation would be one to determine the speeds of the stars, planets and moons in our MWG during the intervening 27.5 billion years when our MWG actually passed through the region of the MBH.

My rough estimate of the diameter of our MWG is about 150,000 lightyears ( $0.15 \times 10^6$  ly, about  $14.19 \times 10^{20}$  m). The size of the MWG is too small to be accurately shown on the FIG. 12 drawing. I have estimated the size (diameter) of the MBH at the center of our Universe as about  $2.58 \times 10^{11}$  meters (which is equivalent to about  $2.7 \times 10^{-4}$  ly), much more than a billion times smaller than the current size of our MWG. So, the MBH would appear on FIGS. 11 and 12 as an almost invisible tiny dot.

Hubble flow data is quite clear that all (or almost all) very far away galaxies in our Universe that our astronomers can image appear to be receding from our MWG at speeds that are generally proportional to their distance from our MWG. (This could suggest that our MWG is at the center of our Universe; but we know that this is extremely unlikely. Another theory (apparently accepted by most scientist currently studying the Cosmos) is that **space between galaxies** is expanding at a constant (or relatively constant) rate; but this (in my opinion) is even more unlikely). The **correct explanation (according to my model as I have explained)** is that almost all of the very far-away galaxies in our Universe **that we can see**, orbit the MBH at the center of our Universe in linear pass-through orbits under the gravitational control of the MBH at the center of our Universe. But of the very far-away, **only the receding galaxies** are easy for us to see and image. As I have explained I believe that the number of far-away galaxies that are approaching the MBH in linear pass-through orbits are approximately equal to the number of linear pass-through galaxies that are receding in linear pass-through orbits.

### **Passing Through the Region of the MB**

So, applying my “**pendulum analogy**”, I believe the speed of our MWG when it was located at the opposite edge of our universe (i.e., at zero speed) about  $50 \times 10^9$  lightyears away from the MBH. I also assume that its speed had increased to about  $14 \times 10^6$  m/s at  $27.5 \times 10^9$  years ago (a distance of about  $650 \times 10^6$  lightyears, before pass-through (BPT) and I understand that its speed is currently about  $14 \times 10^6$  m/s now ( $650 \times 10^6$  lightyears APT). A much more difficult question is: “What was our MWG doing between 27.5 years ago and now?”

I believe that our observable universe has a radius of about 50 billion lightyears which would indicate that the turn-around points for linear pass-through galaxies in our Universe is roughly about 50 billion lightyears from the MBH. To reiterate, my Ross Model proposes that our MWG is more than a billion times larger than the MBH at the center of our Universe and that our MWG passed through the region of



the MBH about 13.75 billion years ago. With this background, we can imagine that beginning at about 27.5 billion years ago, our MWG, after falling a distance of about 49.35 billion lightyears increasing in speed each second, its speed was about  $14 \times 10^6$  m/s, increasing by  $0.6 \times 10^6$  m/s. Its distance to the MBH is at this point only 650 million lightyears. We can assume that the shape of the MWG at this point was approximately the same as it is now. But as our MWG approaches the MBH, we can expect that the center of our MWG would have become more and more stretched in the direction of the MBH because gravitational forces at the star systems at the leading edge (and center) of the galaxy will be feeling much greater attractive forces than the star systems at the trailing edge and the star systems that are distant from the center of the galaxy. This distortion would have continued throughout the transit of our MWG through the region of the MBH. As our MWG approaches closer and closer to the MBH, each of the approximately 100 to 400 billion star-systems will begin to feel gravitational forces different from the rest of the galaxy. According to my rough calculations some of the star systems may have experienced speeds much greater than the speed of light as the galaxy closes in on the MBH. (See Table B below.) According to these rough estimates a significant number of unlucky star systems of our MWG were consumed by the MBH itself. Also, some of the MWG star systems probably were consumed by Black Holes of galaxies in elliptical orbits around the MBH. There probably were collision between stars, planets and moons of our MWG with stars, planets and moons of other galaxies passing through the region of the MBH at the approximately the same time our MWG passed through. However, nearly all of the star systems of galaxies in linear pass-through orbits would have probably passed through the region of the MBH without a scratch.

After passage through the region of the MBH at the center of our Universe, the momentum of the stars systems of our MWG carried them away from the MBH at speeds corresponding to their speeds coming in. But once through the region, the gravity of the MBH began to slow down the star systems. So, now about 13.75 billion years after passage. Our galaxy is continuing its journey pretty-much as it was 27.5 billion years ago. But instead of heading toward the MBH at a distance of 650 million lightyears from our MBH, it is heading directly away from the MBH and toward the opposite edge of our Universe at a distance of 650 million lightyears from the MBH.

Here is a simple explanation: Our MWG at zero speed starting falling toward the MBH from a turn-around point located 50 billion lightyears from the MBH as shown at the left side of FIGS 11 and 11A. Its speed increased each second as it fell from 50 billion lightyears near the edge of our Universe to 650 million lightyears from the MBH at which time its speed had increased from zero to about  $13.4 \times 10^6$  m/s and the pull of gravity from the MBH was increasing its speed by  $0.6 \times 10^6$  m/s. A particular star system in our MWG at that point still had  $650 \times 10^6$  lightyears to fall. Assuming that this particular star system is on a direct path toward the center of the Black Hole at the center of our Universe. How fast will it be traveling when it is consumed by the Black Hole? This particular star system is consumed by the MBH but let us think about a lucky star system that barely misses the MBH.

The speed of this lucky star system (currently [right now] at a distance of  $650 \times 10^6$  ly from the MBH) and it is slowing down due to MBH gravity with a current speed of  $0.6 \times 10^6$  m/s = about 0.002 ly/y.

TABLE B

MWG FALLING from 650 LIGHTYEARS TOWARD MONSTER BLACK HOLE  
Speed of Star Systems Passing Close to the MBH

DISTANCE TO MBH (10 <sup>6</sup> Ly) (meters)		INCREASING SPEED (m/s)	AVERAGE INCREASED SPEED (m/s)	TOTAL SPEED (m/s)	SEGMENT TIME (seconds/yrs)	SPEED
650	6.10X10 <sup>18</sup>	0.6 X 10 <sup>6</sup>		1.40 X 10 <sup>7</sup>		
325	3.05X10 <sup>18</sup>	1.2 X 10 <sup>6</sup>	0.9 X 10 <sup>6</sup>	1.49 X 10 <sup>7</sup>	2.05 X 10 <sup>11</sup> /6.6 X 10 <sup>3</sup>	
162	1.53X 10 <sup>18</sup>	2.4 X 10 <sup>6</sup>	1.8 X 10 <sup>6</sup>	1.5 8 X 10 <sup>7</sup>	9.68 X 10 <sup>10</sup> /3.07X 10 <sup>3</sup>	
81	7.65X10 <sup>17</sup>	4.8 X 10 <sup>6</sup>	3.6 X 10 <sup>6</sup>	1.76 X 10 <sup>7</sup>	4.35 X 10 <sup>10</sup> /1.38 X 10 <sup>3</sup>	
45	3.82X 10 <sup>17</sup>	9.6 x 10 <sup>6</sup>	7.2 X 10 <sup>6</sup>	2.12X 10 <sup>7</sup>	1.80 X 10 <sup>10</sup> /5.27 X 10 <sup>3</sup>	
22	1.91X10 <sup>17</sup>	1.92 X 10 <sup>7</sup>	1.4 X 10 <sup>7</sup>	2.8 X 10 <sup>6</sup>	6.82 X 10 <sup>10</sup> /2.16 X 10 <sup>2</sup>	
11	9.55X10 <sup>16</sup>	3.80 X 10 <sup>7</sup>	2.8 X 19 <sup>7</sup>	4.2 X 10 <sup>6</sup>	2.27 X 10 <sup>10</sup> /7.20 X 10 <sup>2</sup>	
5.5	4.78X10 <sup>16</sup>	7.70 X 10 <sup>7</sup>	5.6 X 10 <sup>7</sup>	7.0 X 10 <sup>7</sup>	6.82 X 10 <sup>9</sup> /2.16 X 10 <sup>1</sup>	
2.7	2.39X10 <sup>16</sup>	1.53 X 10 <sup>8</sup>	1.12 X 10 <sup>8</sup>	1.24 X 10 <sup>8</sup>	1.92 X 10 <sup>8</sup> /6.12 X 10 <sup>1</sup>	
1.4	1.19X10 <sup>16</sup>	3.07 X 10 <sup>8</sup>	2.24 X 10 <sup>8</sup>	2.38 X 10 <sup>8</sup>	5.00 X 10 <sup>7</sup> /1.58 X 10 <sup>-1</sup>	
0.7	5.96X10 <sup>15</sup>	6.14 X 10 <sup>8</sup>	4.48 X 10 <sup>8</sup>	4.62 X 10 <sup>8</sup>	1.29 X 10 <sup>7</sup> /4.09 X 10 <sup>-1</sup>	1.54c
0.3	2.98X10 <sup>15</sup>	1.23 X 10 <sup>9</sup>	8.96 X 10 <sup>8</sup>	9.1 X 10 <sup>8</sup>	3.27 X 10 <sup>6</sup> /1.04 X 10 <sup>-1</sup>	3.01c
0.17	1.49X10 <sup>15</sup>	2.45 X 10 <sup>9</sup>	1.79 X 10 <sup>9</sup>	1.8 X 10 <sup>9</sup>	7.84 X 10 <sup>5</sup> /2.48 X 10 <sup>-2</sup>	6.00c
8X10 <sup>-2</sup>	7.45X10 <sup>14</sup>	4.91 X 10 <sup>9</sup>	3.58 X 10 <sup>9</sup>	3.58 X 10 <sup>9</sup>	2.08 X 10 <sup>5</sup> /6.60 X 10 <sup>-3</sup>	11.9c
4X10 <sup>-2</sup>	3.73X10 <sup>14</sup>	9.83 X 10 <sup>9</sup>	7.16 X 10 <sup>9</sup>	7.16 X 10 <sup>9</sup>	5.21 X 10 <sup>4</sup> /1.80 X 10 <sup>-1</sup>	23.9c
2X10 <sup>-2</sup>	1.86X 10 <sup>14</sup>	1.97 X 10 <sup>10</sup>	1.43X 10 <sup>10</sup>	1.43 X 10 <sup>10</sup>	1.30 X 10 <sup>4</sup> /4.13 X 10 <sup>-4</sup>	47.7c
1X10 <sup>-2</sup>	9.31X10 <sup>13</sup>	3.94 X 10 <sup>10</sup>	2.87 X 10 <sup>10</sup>	2.86 X 10 <sup>10</sup>	3.25 X 10 <sup>3</sup> /1.03X 10 <sup>-4</sup>	95.3c
5X10 <sup>-3</sup>	4.66X10 <sup>13</sup>	7.88 X 10 <sup>10</sup>	5.91 X 10 <sup>10</sup>	5.91 X 10 <sup>10</sup>	7.88 X 10 <sup>2</sup> /2.50 X 10 <sup>-5</sup>	197c
2.5X10 <sup>-3</sup>	2.33X10 <sup>13</sup>	1.58 X 10 <sup>11</sup>	1.18 X 10 <sup>11</sup>	1.18 X 10 <sup>11</sup>	1.97 X 10 <sup>2</sup> /6.25 X 10 <sup>-6</sup>	393c
1.2X10 <sup>-3</sup>	1.67X10 <sup>13</sup>	3.16 X 10 <sup>11</sup>	2.37 X 10 <sup>11</sup>	2.37 X 10 <sup>11</sup>	70.5/2.23 X 10 <sup>-6</sup>	790c
6.1X10 <sup>-4</sup>	8.32X10 <sup>12</sup>	6.32 X 10 <sup>11</sup>	4.74 X 10 <sup>11</sup>	4.74 X 10 <sup>11</sup>	1.75/5.572 X 10 <sup>-7</sup>	1580c

(The reader should note that I am aware that the units of acceleration are normally m/s<sup>2</sup>. However, in this case where we are dealing with distances of lightyears where the acceleration changes extremely slowly with distance and later changes extremely fast with distance. Therefore, I think it should be OK to describe acceleration in terms of speed at particular distances; while recognizing that the speed of the falling object is going to be changing extremely slowly when early distances to the gravity source are very great (such as millions and billions of lightyears) and speeds will be changing very quickly later when the falling object is getting close to the gravity source (such as fractions of lightyears).

In Table B above, I estimate the speed of this lucky star system during the trip from about 650 X 10<sup>6</sup> lightyears to the MBH. I am assuming that when its distance from the MBH is reduced by half such as from 650 X10<sup>6</sup> lightyear to 325 X 10<sup>6</sup> lightyear, the star's speed toward the MBH will be doubled from 0.6

$\times 10^6$  m/s to  $1.2 \times 10^6$  m/s. From this point another reduction by half of the distance to the MBH will produce another doubling of the gravity produced speed to  $2.4 \times 10^6$  m/s of the particular star system. If we continue dividing the distance to the MBH by two and doubling the gravity-produced speed of the particular star system, the speed of the star system will in time exceed the speed of light. In Table B I have shown a total of 13 reductions of distance by half and doubling the speed produces a speed of about 4.8 billion m/s (16 times the speed of light) when the star system is located at 0.007 light years from the MBH.

So, when the lead star system of the MWG approaches the MBH at the center of our Universe at a distance of about 0.02 million lightyears, it may be traveling at a speed of almost 20 billion meters per second, about 65 times the speed of light, according to these calculations. Portions of our galaxy will reach a speed equal to the speed of light at a distance of about 1.4 lightyears from the Black Hole. However, since the diameter of our MWG is estimated at about **0.15 million lightyears**, star systems near the edges of our galaxy will develop maximum speeds not much greater than the current speed of the MWG (i.e., about  $14 \times 10^6$  m/s). Also, the reader should keep in mind that after the galaxy passes through the MBH the speed of the galaxy will be slowed down by the gravity of the MBH so that at the distance of 650 million light years after pass through the region of the MBH; the average speed of all of the star systems of the galaxy speed should again be about 14 million meters per second.

FIGS. 11 and 11A provide my rough estimate of the speed of the fastest portion of our MWG during a 100 billion lightyear trip from one turn-around through past-through to an opposite turn-around. Like a pendulum, the second half of the trip is a mirror image of the first half.

### ULTIMATE FATE OF OUR COSMOS

Generally accepted theories are not clear as to the ultimate fate the Cosmos. My John Ross Model of the Cosmos proposes a long happy future for the Cosmos. My model recognizes that our Universe is only one of many universes in the Cosmos. Each universe in the Cosmos is comprised of at least one MBH with gravitational control over thousands, millions, billions or trillions of galaxies; with each galaxy having gravitational control over thousands, millions, billions or trillions of star systems making up the galaxies. I believe our Universe is a typical universe. I am assuming that our Milky Way Galaxy is a typical galaxy that we can see with our own eyes on each clear dark night. The Monster Black Hole of our Universe consumes small portions of our Universe to produce the neutrino photons that spread out radially for distances of many billion lightyears to provide gravitational control of 100 to 400 billion galaxies that we can see receding from the center of our Universe. According to my model there are an approximately equal number of galaxies approaching our MBH that we have not been able to identify. We believe that the galaxies of our Universe are spread out over an approximately galaxy-shaped volume with a diameter of about 100 billion lightyears, with most of them orbiting the Monster Black Hole in linear pass-through orbits.

When our astronomers look out beyond the edge of our Universe, they do not image points that represent galaxies. Instead, they image lines of light, that they call filaments. According to my model, these lines of light are galaxies that are not galaxies receding from the MBH at the center of our Universe. They are mostly galaxies that are not part of our Universe. Filaments may also be galaxies of our Universe that are approaching, rather than receding from, our MBH. An important feature of my model is that nearly all galaxies of our Universe are traveling in linear pass-through orbits of the MBH in the center of our Universe with orbit periods of billions of earth years and distances of billions of lightyears. I am assuming that our

galaxy is a typical galaxy; so, the galaxies of other universes should have orbits similar to the orbits of our MWG. This means that if the momentum of a galaxy of one universe carries the galaxy beyond the edge of its universe, there is a good chance it will be grabbed by the gravity of the MBH in a surrounding universe and become a part of a neighbor universe. A result is that each universe in the Cosmos will come to define its separate territory, with some exchanges of galaxies near the edges of the universes.

As I have explained above Black Holes radiate mass in the form of neutrino photons at about the same rate that they consume protons. Most of these neutrino photons will be captured by an electron which will capture two positrons to create a new proton. So, Black Holes are not responsible for any great change in the mass of galaxies or universes. Exchanges of galaxies at the edges of Universes also will not result in a big change in the net mass of the universes.

We may be particularly interested in the future of our Milky Way Galaxy. Assuming that our MWG orbits with an orbit cycle of about 200 billion lightyears and that we passed through the region of the MBH 13.75 billion earth years ago and that our MWG is now located 650 million light years from our MBH; we can look forward to turnaround after traveling another 49,350 billion lightyears. If we assume that our average speed during that portion of our trip, is one half of our current recession speed (i.e., 7 million m/s), our descendants will be receding for a long time (i.e., 2.1 trillion earth years). And the return trip back to the region of our MBH would take a little more than the same amount of time to get back. Passing back through the region of the MBH could be a problem for our descendants. But they have a long time to deal with that problem. In the meantime, we will have to deal with global warming, pandemics, and other issues. Also, we are told that our sun will turn into a red giant in about 5 billion years and may consume out earth. So, at some point, we will need to have a massive migration to another nice planet in our galaxy or maybe another nice planet in another galaxy in our Universe or even in another galaxy in another universe. In any case, it looks like our Cosmos will continue forever.

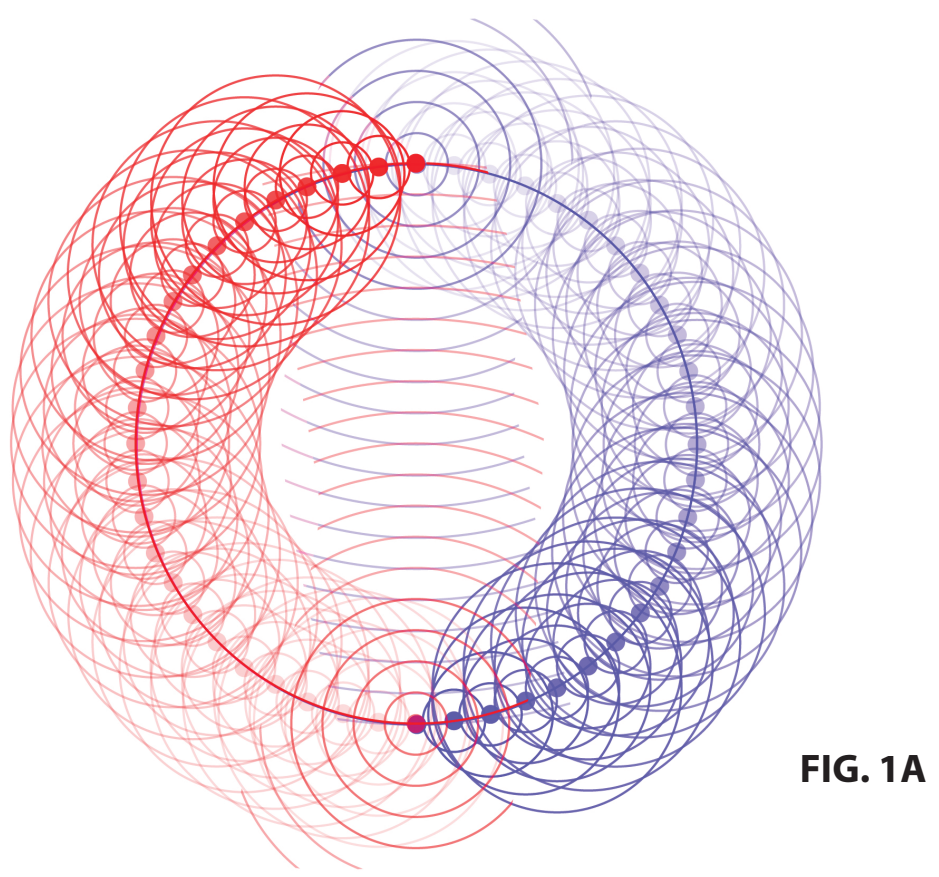
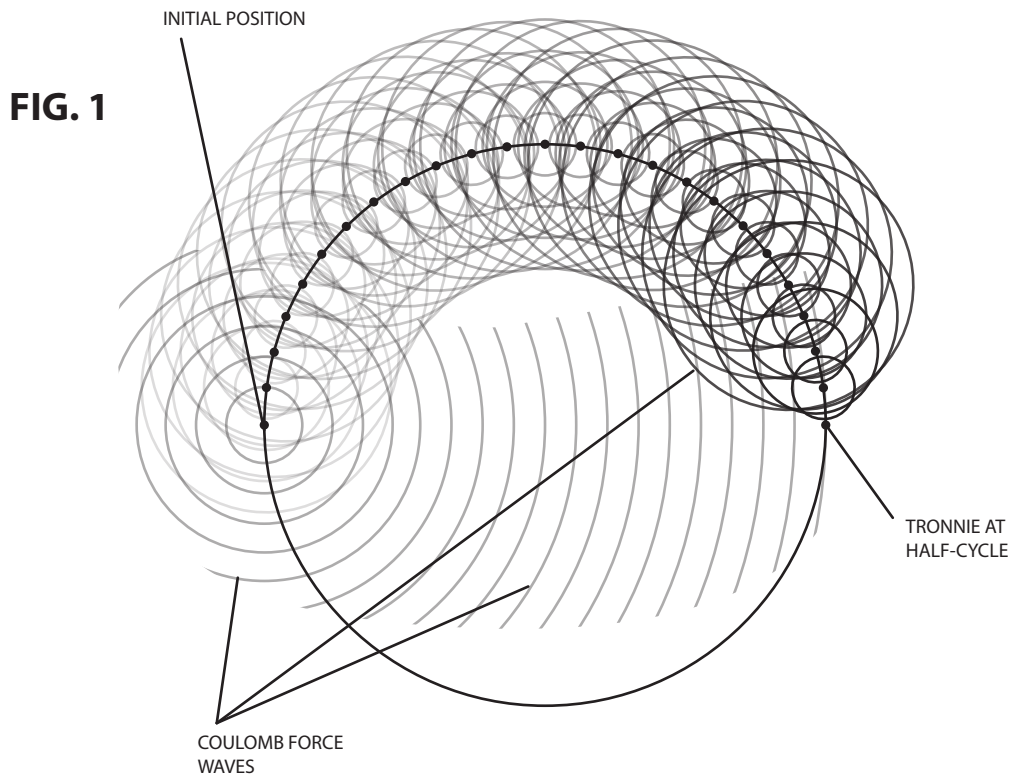
Let's hope that our descendants will be able to do the same at least in some form or fashion.

John R. Ross  
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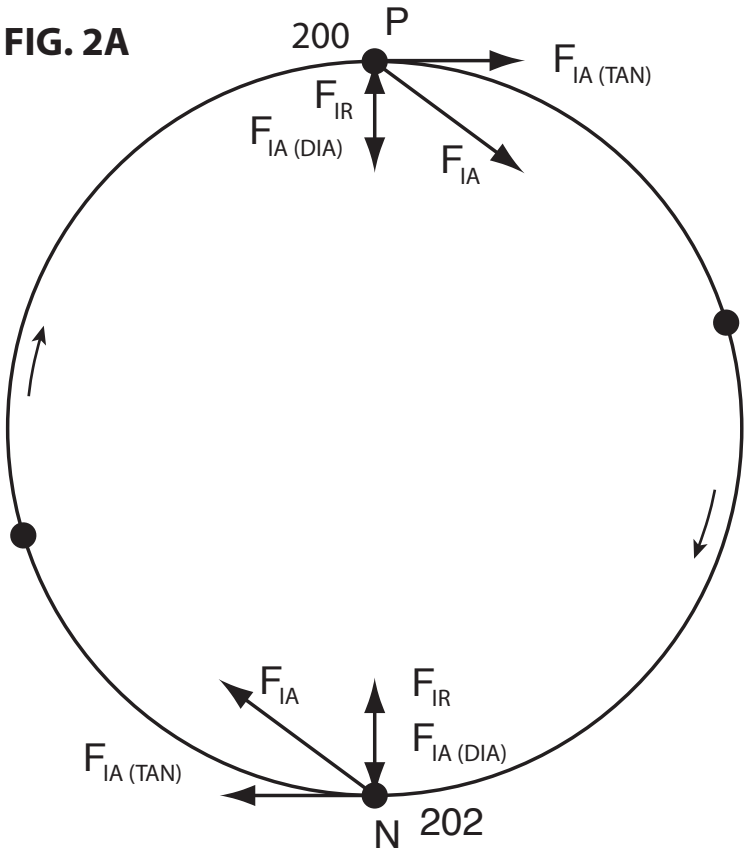
## NOBEL PRIZE

In this paper I describe 17 of my most important discoveries and explanations, each of which should justify for me a Nobel Prize in Physics.

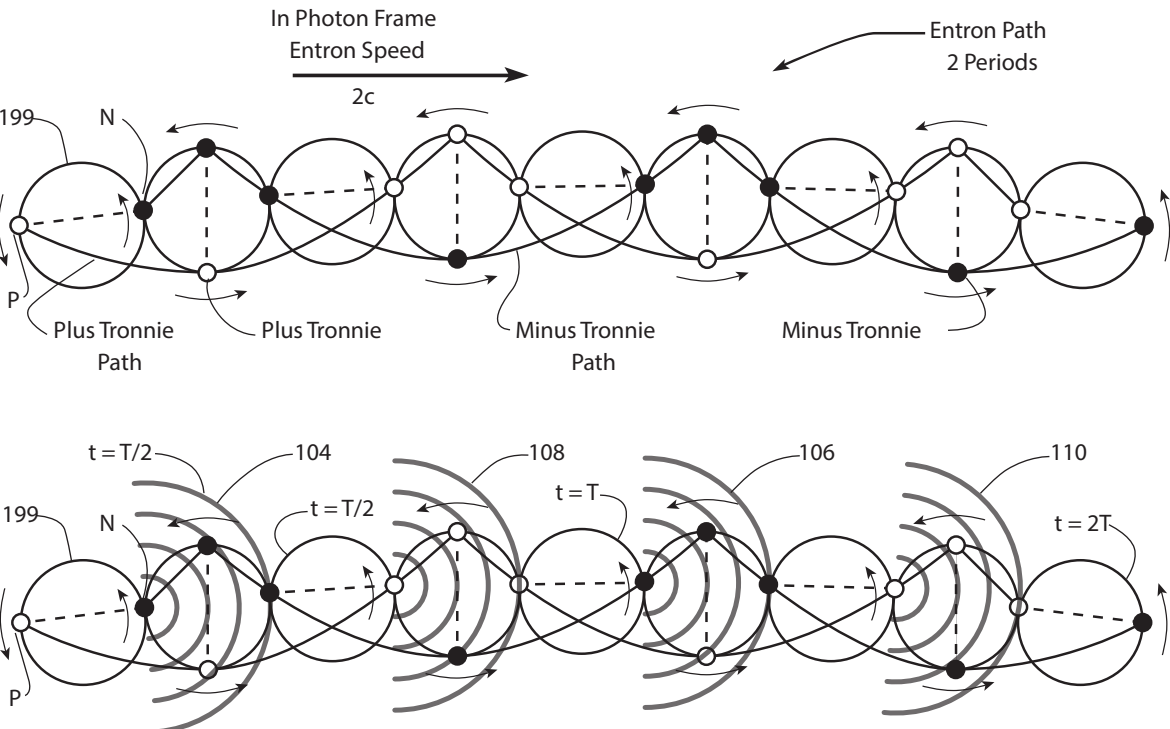
1. My discovery of the tronnie is a first reason for awarding me the Nobel Prize in physics!
2. My discovery of the entron and the internal structure of all photons in the Cosmos is a second reason why I should be awarded the Nobel Prize in physics!
3. My discovery of the neutrino entron and the neutrino photon (the God Particles) is a third reason why I should be awarded the Nobel Prize in physics!
4. My explanation of pair production and electron-positron annihilation is a fourth reason why I should be awarded the Nobel Prize in Physics.
5. My discovery of the internal structure of the electron and the positron is a fifth reason why I should be awarded the Nobel Prize in Physics!
6. My description of the internal structure of the proton and the anti-proton is a sixth reason why I should be awarded the Nobel Prize in Physics!
7. My description of the alpha particle, its internal structure and its identification as the basic building block of atomic nuclei is seventh reason why I should be awarded the Nobel Prize in Physics!
8. My explanation proving that there are no neutrons in stable atoms is an eight reason why I should be awarded the Nobel Prize in Physics!
9. My description of the internal structure of all stable atomic nuclei, mostly comprised of alpha particles, is a ninth reason why I should be awarded the Nobel Prize in physics!
10. My explanation of the uranium and plutonium fission processes (explaining why 2 or 3 neutrons are released with each fission) is a tenth reason why I should be awarded the Nobel Prize in physics!
11. My explanation of particle spin, that particle spin is real and my explanation showing why the electron and the proton have the same particle spin are an eleventh reason why I should be awarded the Nobel Prize in physics!
12. My development of my Ross Model as a replacement for the Standard Model, Einstein Relativity and Quantum Mechanics is a twelfth reason why I should be awarded the Nobel Prize in Physics.
13. My concept of Coulomb grids providing grids through which light can travel at the speed of light is a thirteen reason why I should be awarded a Nobel Prize in Physics!
14. My description of linear pass-through galactic orbits of Monster Black Holes defining universes is a fourteenth reason why I should be awarded the Nobel Prize in Physics!
15. My recognition that, the hydrogen atoms that populate the interstellar, intergalactic and (probably) inter-universe space, are produced from the gravity carrying God Particles are a fifteenth reason why I should be awarded the Nobel Prize in Physics!
16. My explanation of Dark Energy and Dark Matter is a sixteenth reason why I should be awarded the Nobel Prize in Physics!
17. My explanation of gravity provided by the God Particles (neutrino entrons and neutrino photons) produced in Galactic and Universe Black Holes is a seventeenth reason why I should be awarded a Nobel Prize in Physics.



**FIG. 2A**

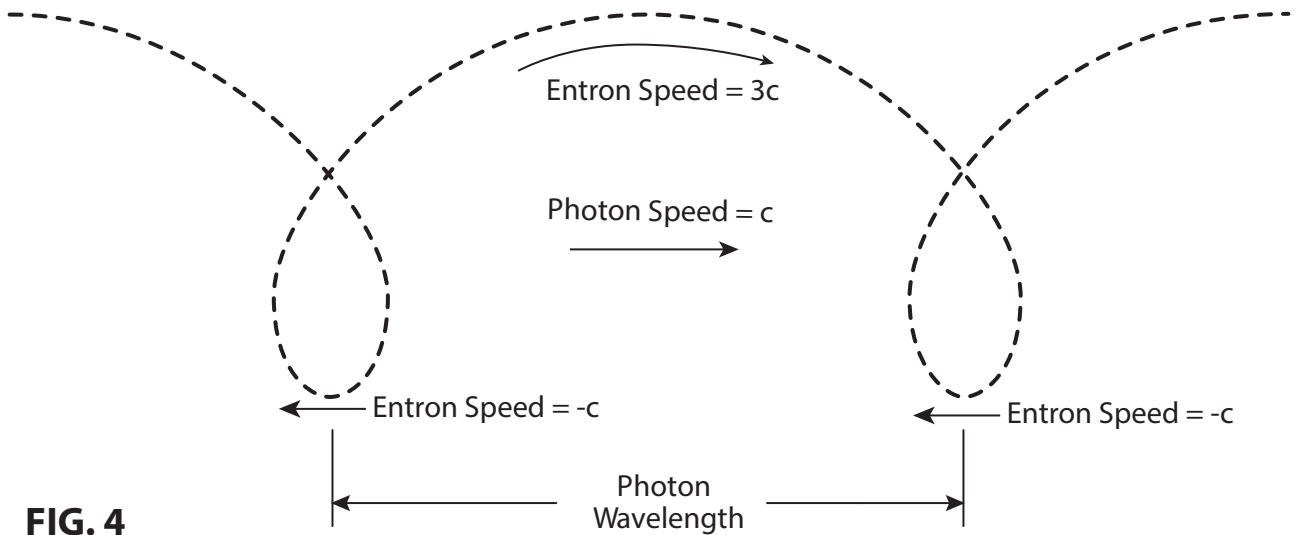
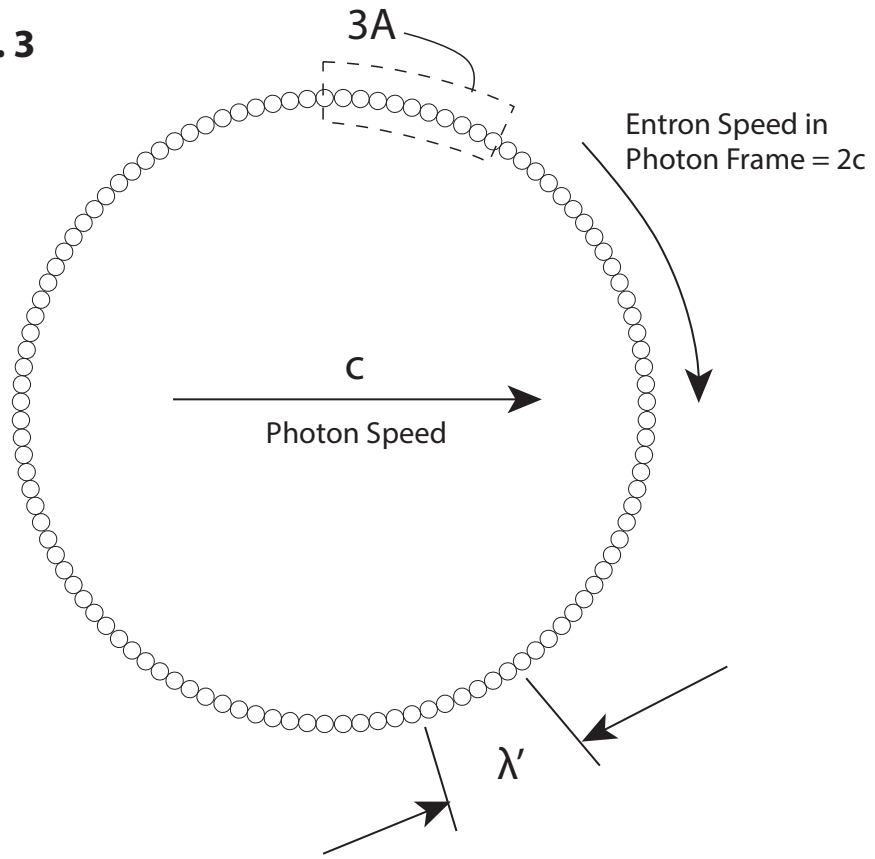


**FIG. 2C**



**FIG. 2D**

**FIG. 3**

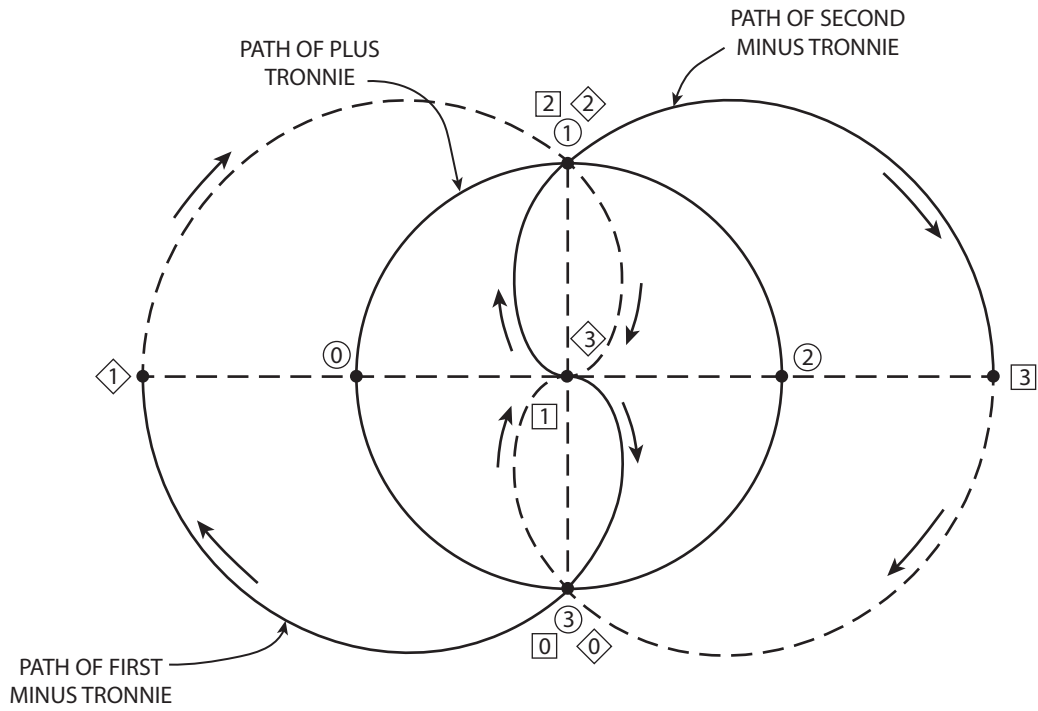


**FIG. 4**

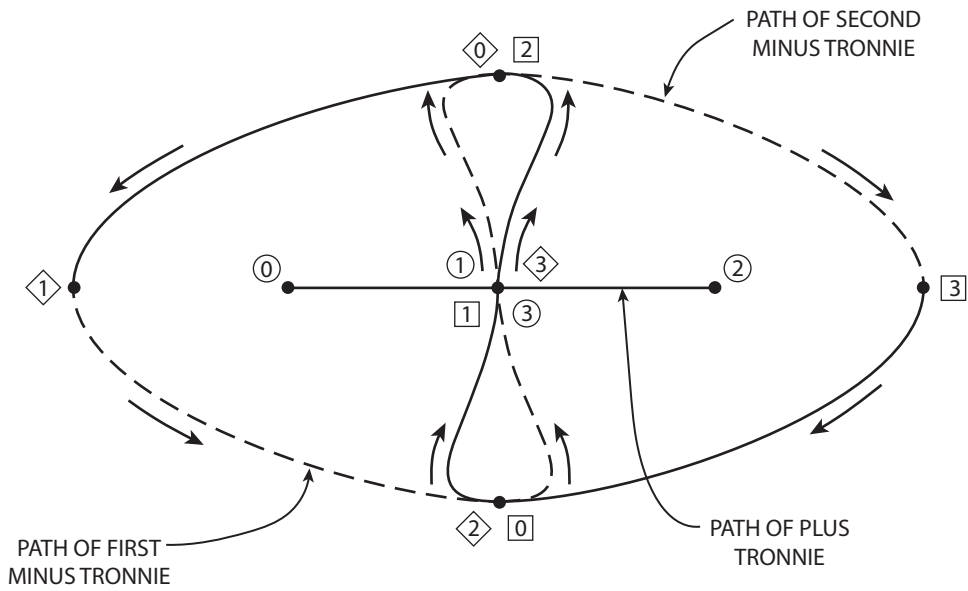


**FIG. 5  
THE ELECTRON**

**TOP VIEW**



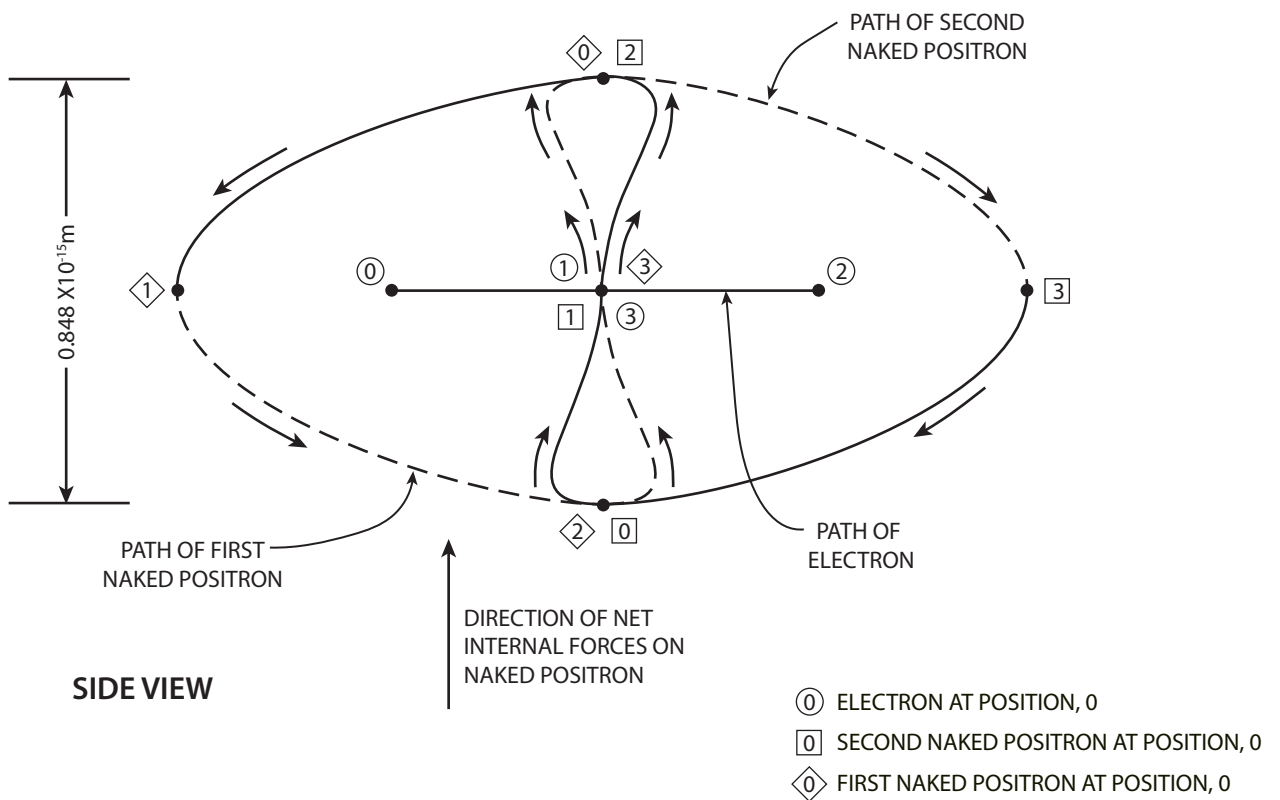
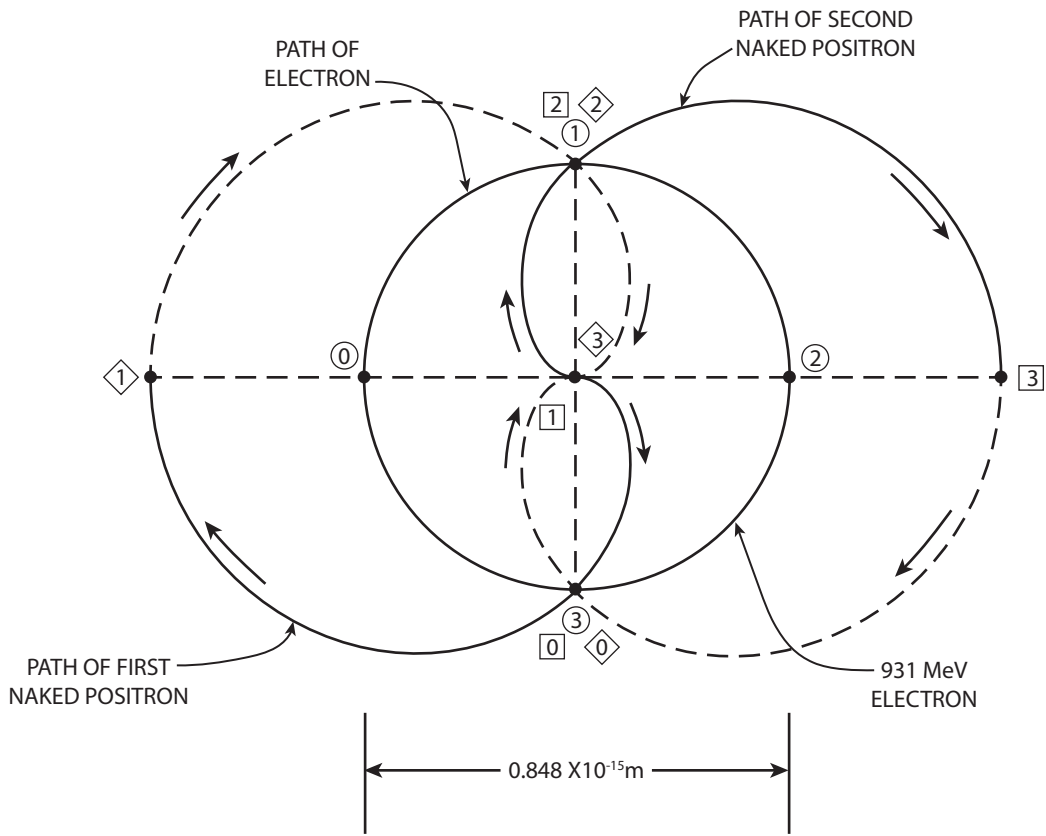
**SIDE VIEW**



- ⊙ PLUS TRONNIE AT POSITION, 0
- ⊠ FIRST MINUS TRONNIE AT POSITION, 0
- ◇ SECOND MINUS TRONNIE AT POSITION, 0

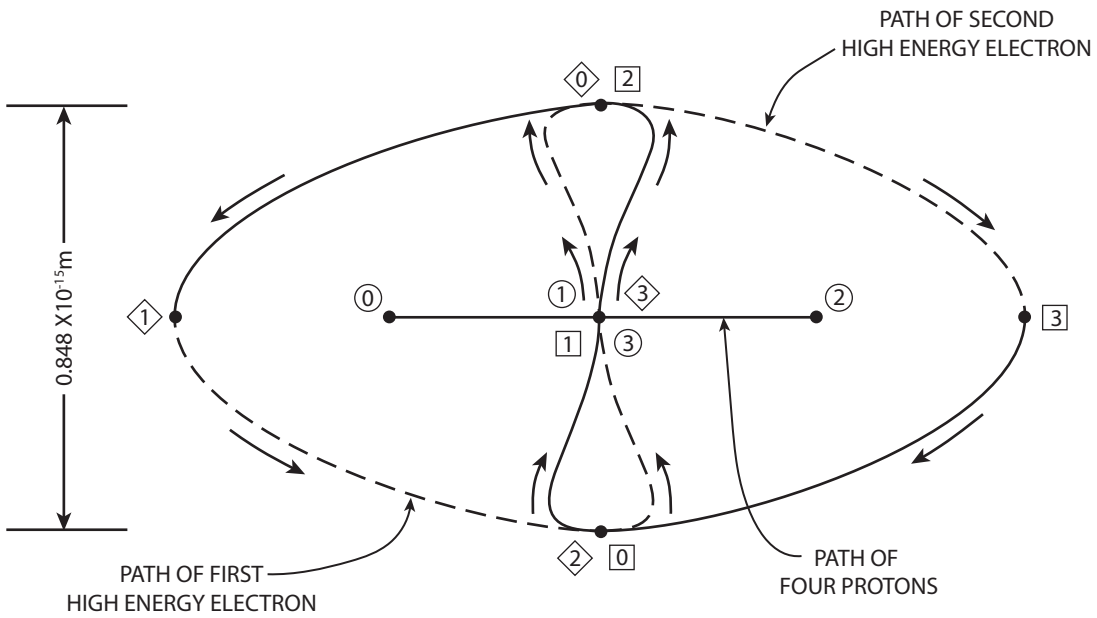
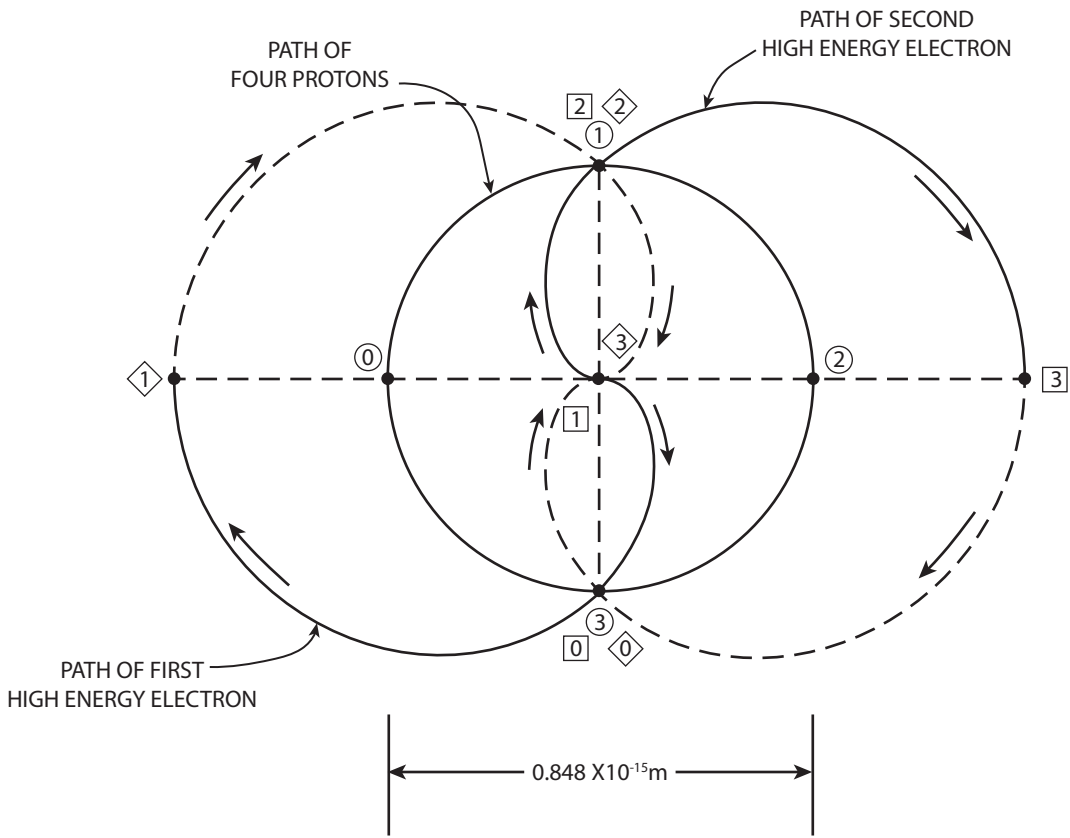
**FIG. 6  
NAKED PROTON**

**TOP VIEW**



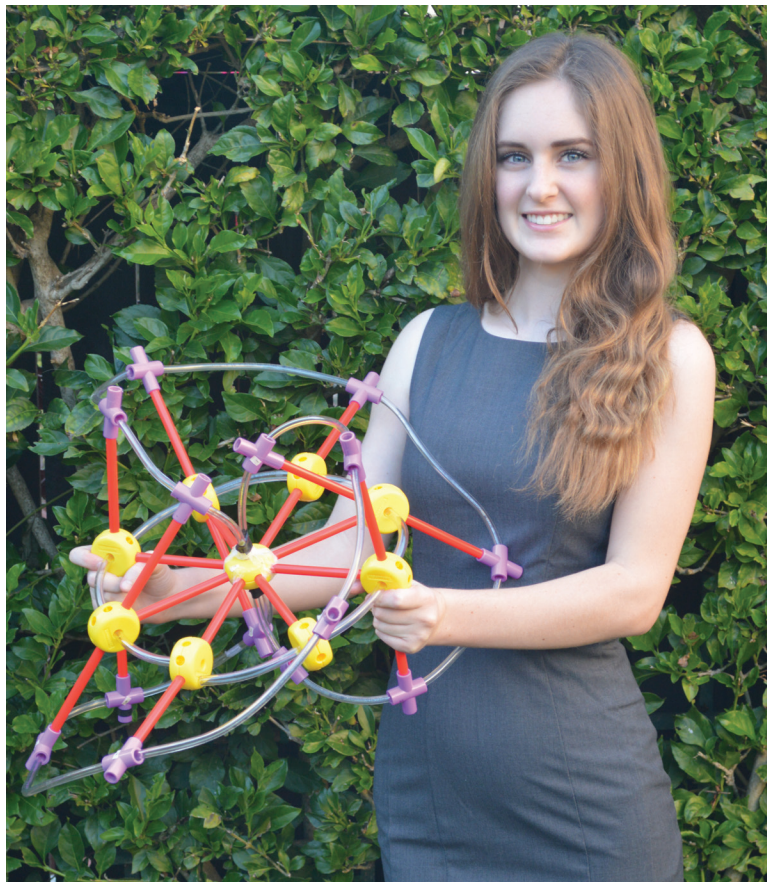
**FIG. 7**  
**NAKED ALPHA PARTICLE**

**TOP VIEW**

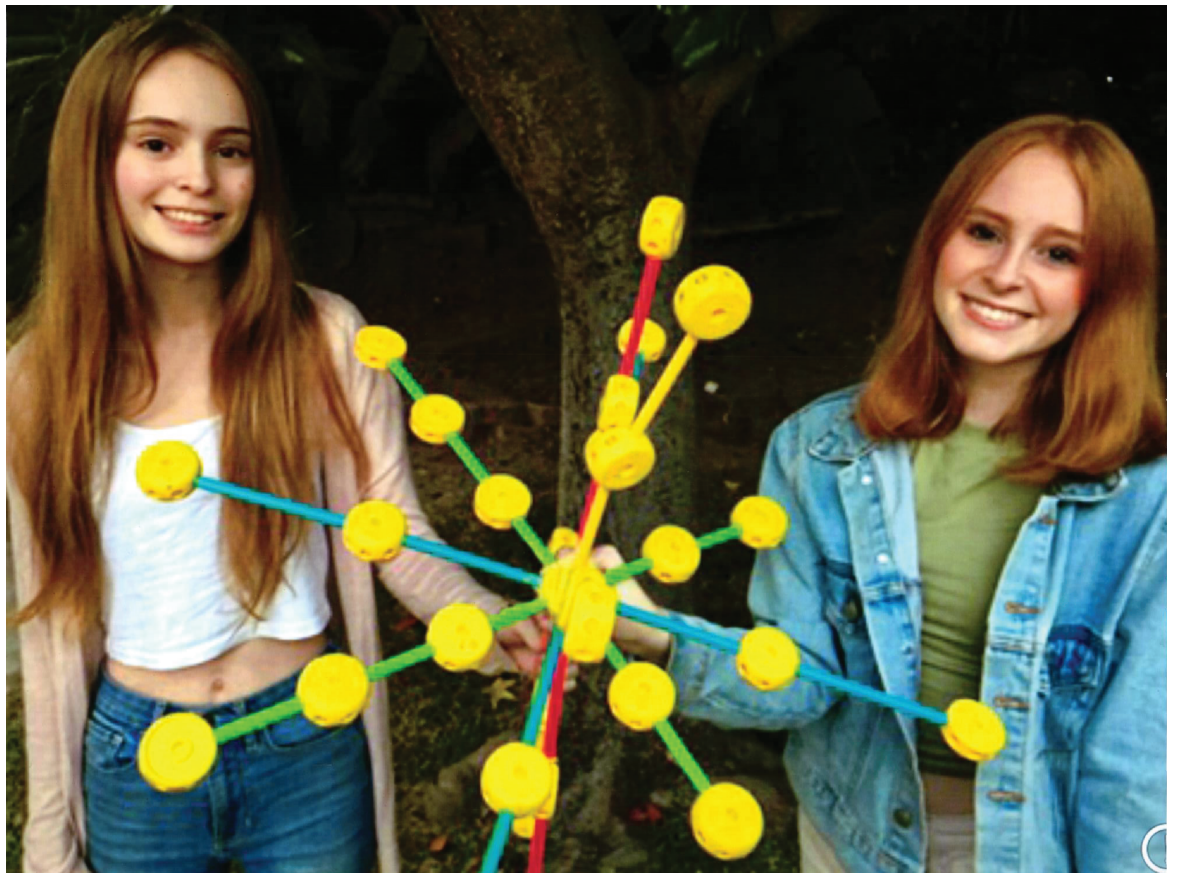


**SIDE VIEW**

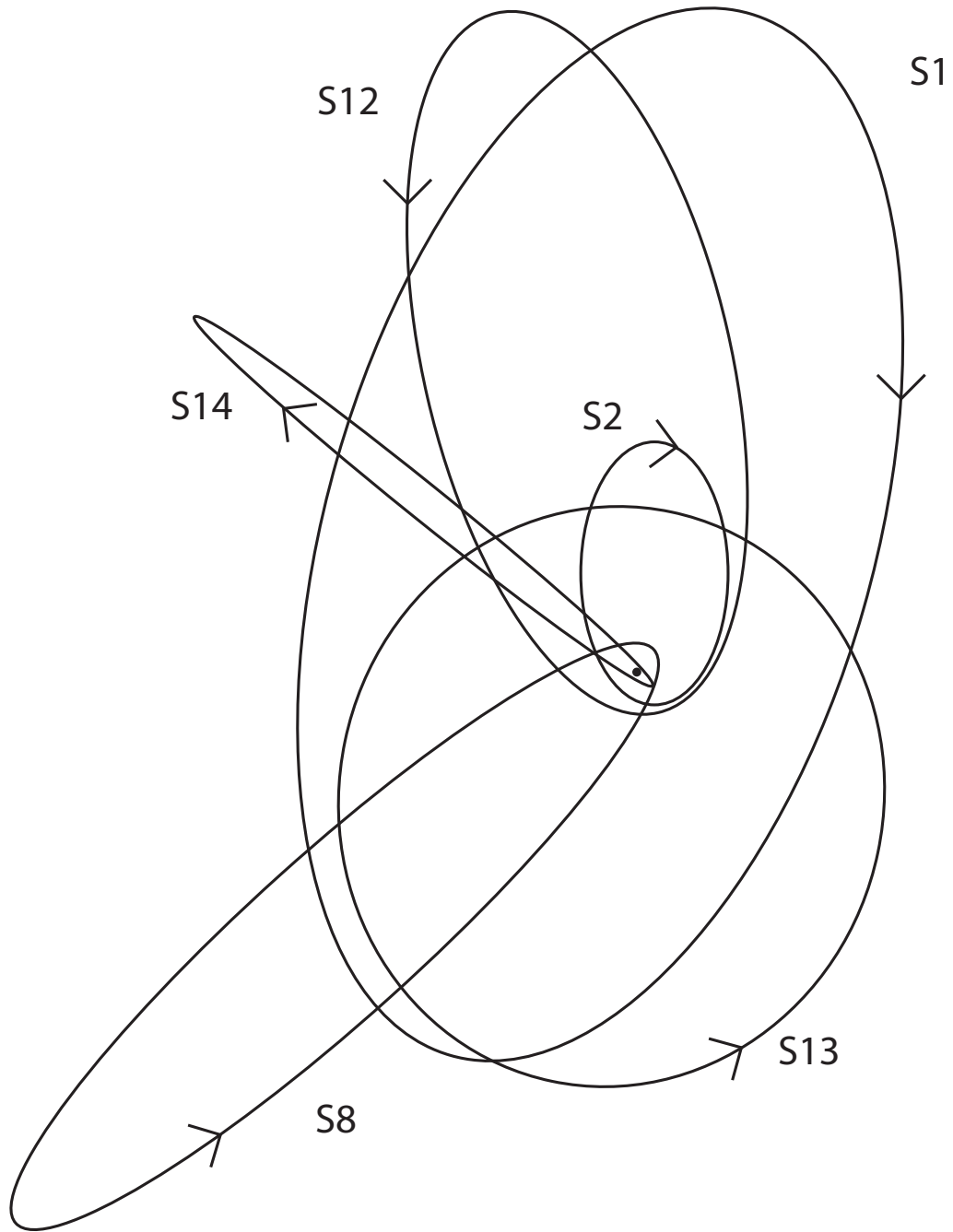
- ⊙ ELECTRON AT POSITION, 0
- ⊠ SECOND NAKED POSITRON AT POSITION, 0
- ◇ FIRST NAKED POSITRON AT POSITION, 0



**FIG. 8A**



**FIG. 8B**

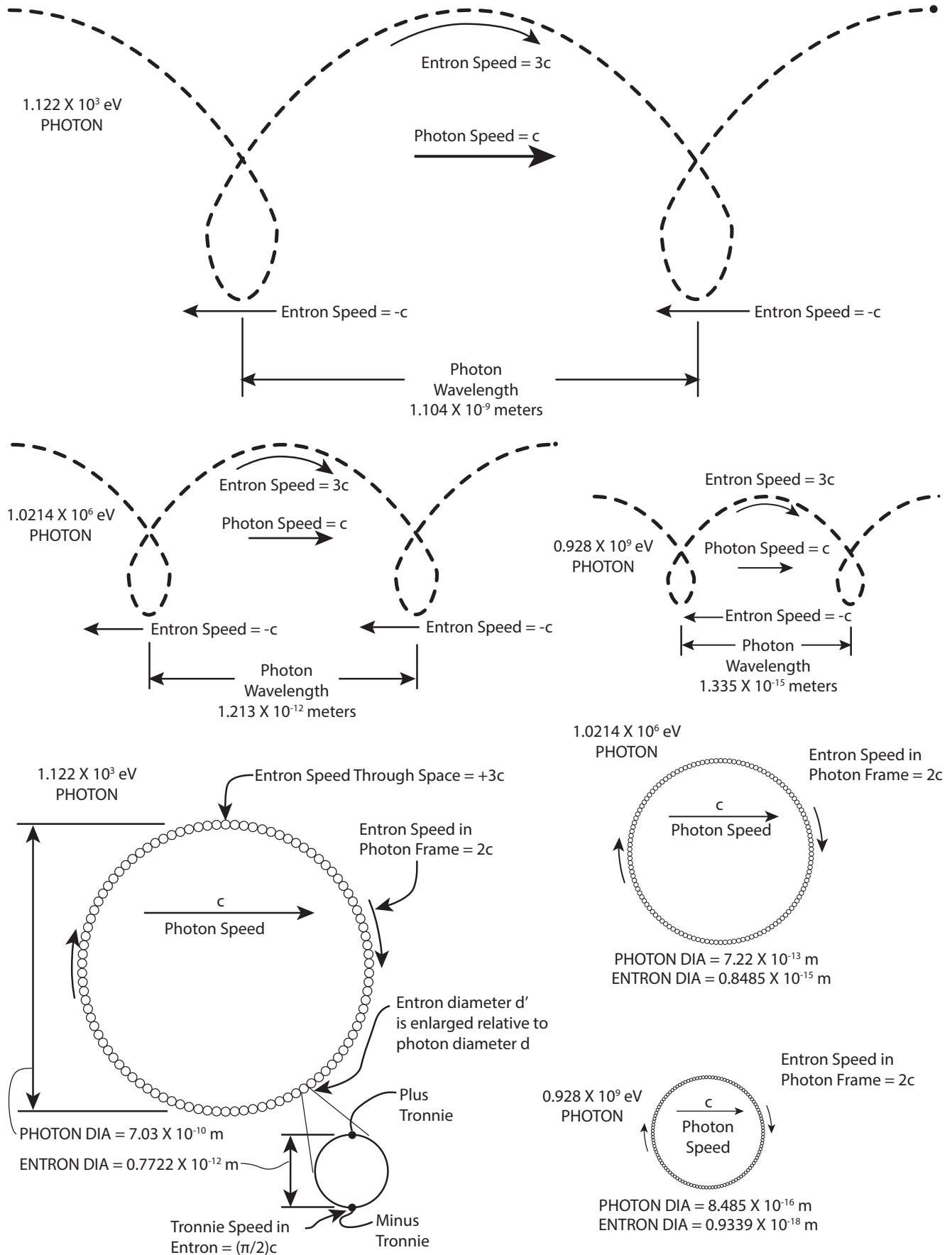


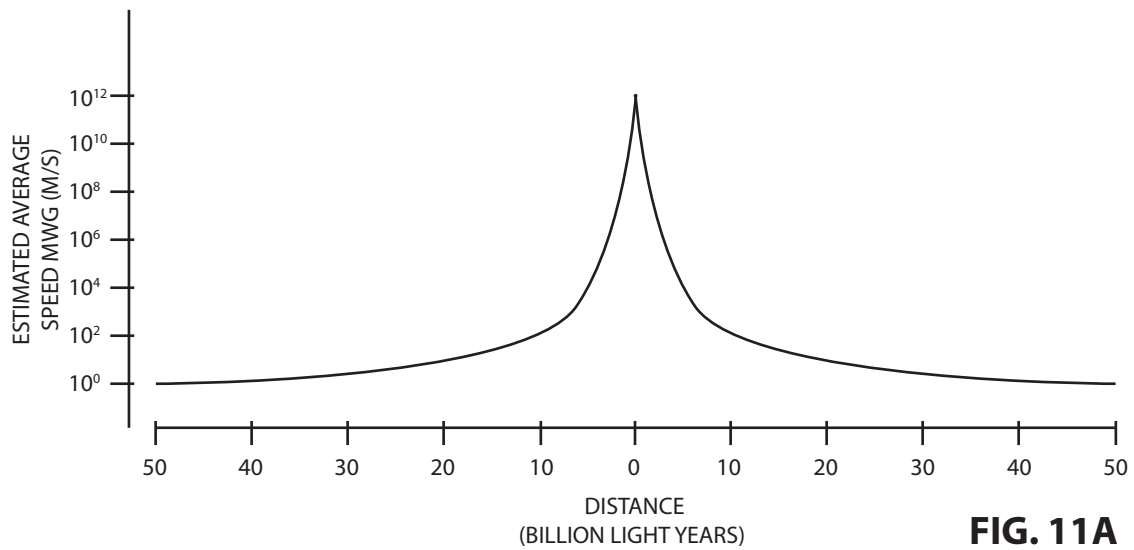
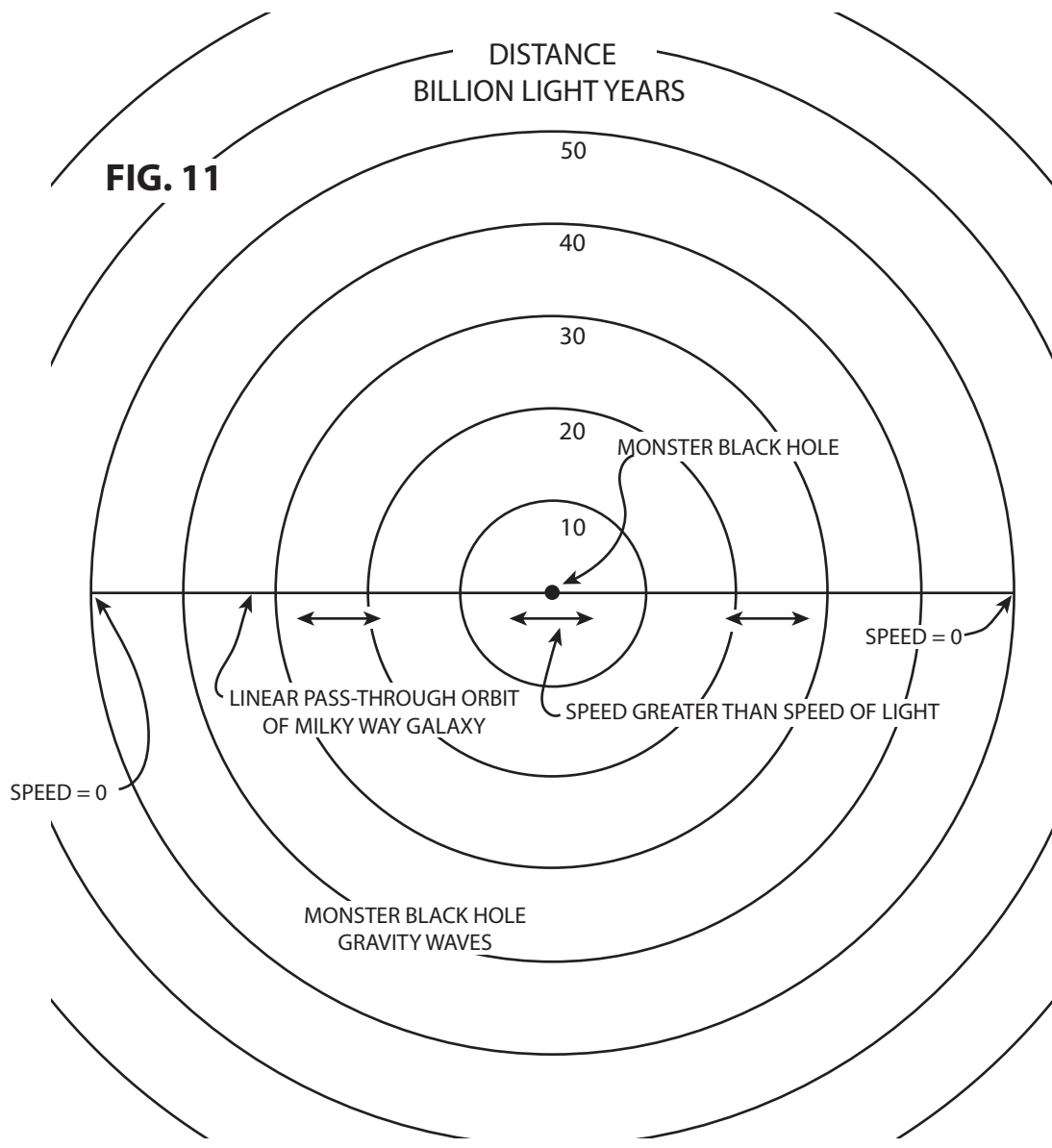
Approximate orbits of six stars around supermassive black hole candidate Sagittarius A\* at the center of the Milky Way galaxy.

**FIG. 9**

**FIG. 10**

PAIR PRODUCTION PHOTONS





**FIG. 11A**

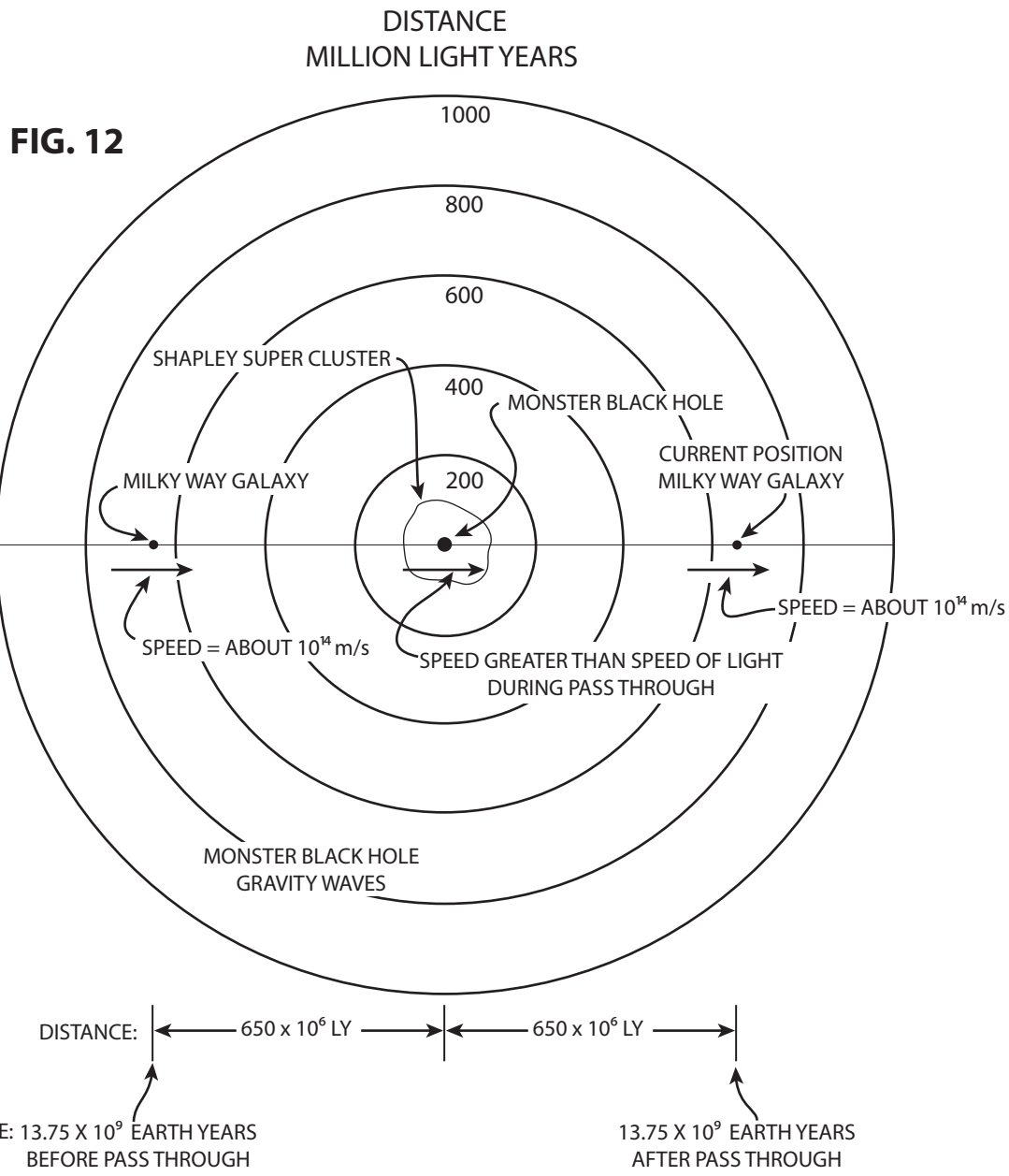
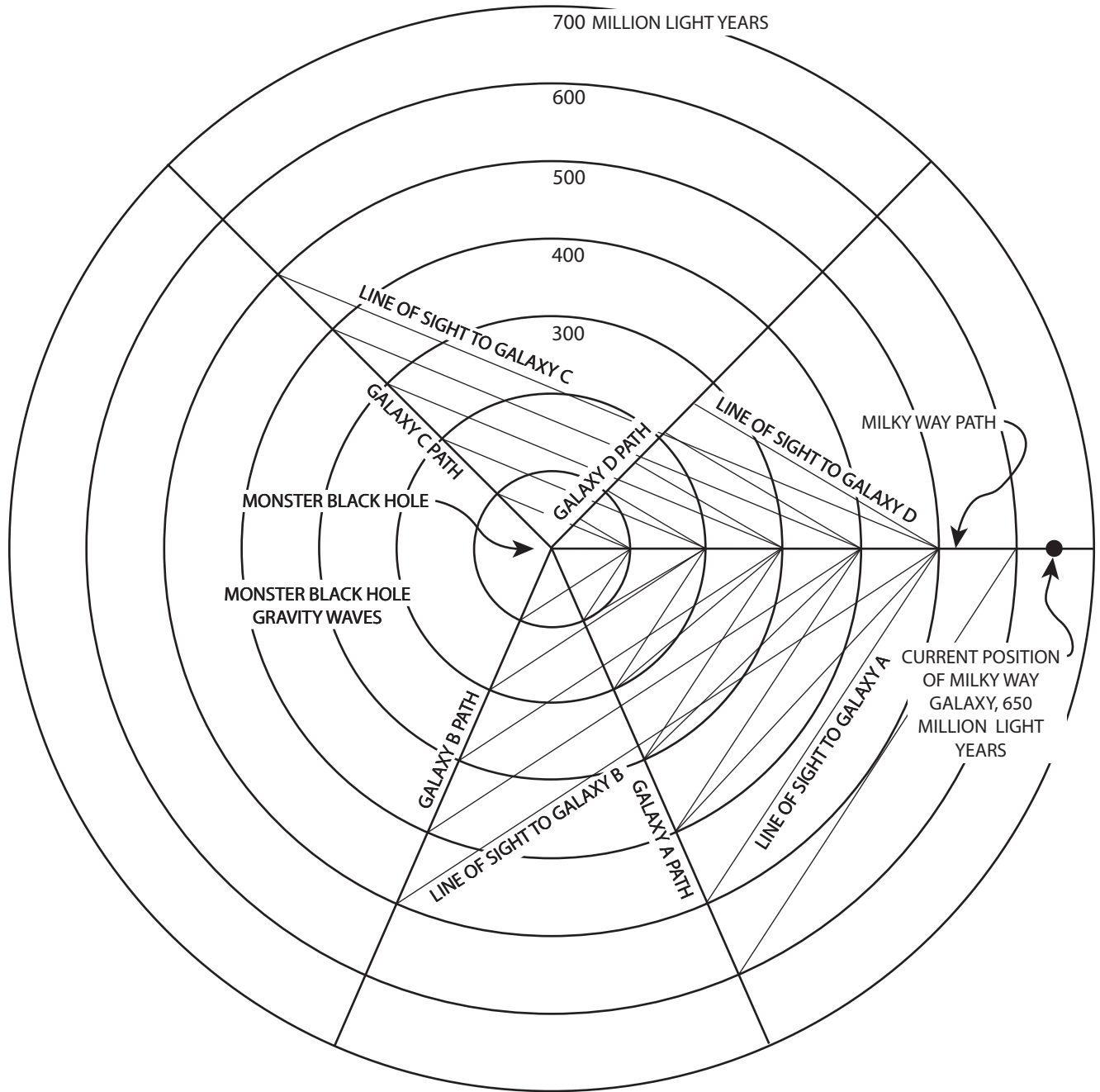




FIG. 13

WHY OUR UNIVERSE ONLY APPEARS TO BE EXPANDING



THE PATHS OF THE GALAXIES APPROACHING MBH ARE NOT SHOWN ON THIS DRAWING.  
PATHS OF THE MWG AND GALAXIES A, B, C, D PRIOR TO PASSAGE THROUGH THE REGION OF MBH ARE NOT SHOWN.

**FIG. 14**

A TINY SLICE OF  
**THE COSMOS**

