

Big Bang Theory's Nuclear Option

By James Carter

The energy that produced the Big Bang occurred from the standard atomic and nuclear physics that has generally been adopted by the various interpretations of quantum mechanics. There is no physical evidence to support the Big Bang idea that the universe began with the sudden appearance of a "Pure Energy Spacetime Singularity". All evidence points to a universe that began with a single eternal duality containing the same amount of energy and mass as the original Big Bang idea. This duality is energy/mass as in $e/m = c^2$. The universe began not with an indefinable quantity of pure energy and no mass $e = 1$ and $m = 0$, but rather with a precise quantity of energy/mass $e/m = CC = 1$ that was contained in the angular momentum of particles of matter spinning at C in opposite directions. The universe began with its present quantity of energy/mass contained in a single anti-hydrogen atom. Today's universe has the same single quantity of energy/mass but it is now divided between 2^{257} electrons and protons, countless photons, and the kinetic energy and kinetic mass of moving atoms.

The following story of the Living Universe is a quantum mechanical tale of how a single antimatter atom god seed germinated, sprouted, grew, and then went to seed with exactly 2^{257} protons and electrons. The dynamics and interactions of the Living Universe can be understood and illustrated by measuring quantum mechanical parameters and gravitational dynamics with accelerometer readings of force and motion to calculate the values of momentum, force, and energy for atoms and photons.

Big Bang Theory's Nuclear Option explains how standard nuclear and atomic physics calculates the evolving dynamics and properties of atoms and neutrons as the energy/mass of electrons slowly decrease. The proton's mass does not change but the energy gained from the electron's lost mass eventually makes it to the protons in the form of kinetic energy that translates into kinetic mass. The Living Universe is slowly heating up by converting the absolute energy/mass $e/m = CC$ of atoms into the relative energy/mass of photons $e/m = cC$. From beginning to end, this evolutionary process does not change the universal totals for either mass or energy because they are always measured as equals. A photon's energy is a measure of its mass and an atom's mass is a measure of its energy.

The basic difference between Big Bang theories and the principle of the Living Universe is the complex ways in which the universe's original mass and energy were divided up into individual atoms and photons and then spread throughout the cosmos. In the Living Universe, this process follows the basic rules of quantum mechanics and in the Big Bang theories, quantum mechanics is mostly ignored and its theorist's ideas for creating and dividing up atoms and photons are based on several different smoke and mirrors, mathematical inventions of dimensions, spacetime continuum fields, and aethers, all of which violate the basic rules and conservation laws of quantum mechanics. Special relativity theories are based on separate mass and photon energies $e = mc^2$ and not relevant to a discussion of Living Universe based on the eternal unification of energy/mass $e/m = c^2$.

The Living Universe is based on the scientific method of measurement and makes none of Big Bang theory's unverifiable metaphysical assumptions that violate natural conservation laws. The Big Bang's initial violation of natural law is the creation of matter without antimatter. It then goes on to require that energy and momentum gradually disappear from Cosmic Blackbody Photons, as they travel through the fabric of "expanding space".

In the Living Universe, the 1/1 ratio between antimatter/matter particles is a quantum mechanical constant and cosmic blackbody photons remain on the precise blackbody distribution curve of their original temperature of 2.7° Kelvin.

The Big Bang began instantly at a virtually infinite temperature and has been cooling off ever since. The Living Universe once had a temperature of absolute 0°K and then caught on fire and burned for a while before going out at a temperature of 2.7° Kelvin. It then has been gradually warming up ever since.

Big Bang theories violate the conservation of momentum and the first and second laws of thermodynamics because they have no fixed relationship between energy and mass, as in their equation $e = mc^2$, and no equality between positive and negative charges. The Living Universe observes the absolute conservation of energy, momentum, angular momentum, charge equality, and the eternal existence and equality of energy/mass with the photon mass equation $e/m = c^2$.

Big Bang theorists illustrate their ideas with a multitude of complex mathematical equations that calculate values for imaginary metaphysical parameters such as aethers and fields. The Living Universe equations listed below simply illustrate the mass, space and, time relationships between electrons, protons, neutrons, and photons as calculated with the parameters of this new interpretation of standard model quantum mechanics. The Living Universe is a steady state universe that is eternally evolving into a new and different future based on the changing values of the following quantum mechanical equations of universal parameters.

Living Universe Equations

Electron/Proton Mass Ratio Today---	$m_e/m_p = 1/1836$
Bohr radius -----	$a_0 = \lambda_\infty \alpha / 4\pi$
Electron Angular Momentum -----	$I\omega = m_e a_0 \alpha c$
Fine Structure Constant -----	$\alpha = 4\pi a_0 / \lambda_\infty$
Photon Energy/Mass -----	$e/m = cC$
Hydrogen Ionization Photon -----	$\lambda_\infty = 4\pi a_0 / \alpha$
Photon Momentum -----	$p = mc$
Photon Angular Momentum -----	$I\omega = m\lambda c / 2\pi$
Electron Momentum -----	$p = m_e v$
Electron Angular Momentum -----	$I\omega = m_e a_0 \alpha c$
Electron kinetic energy -----	$e = m_e v^2 / 2$
Neutron Stability Number -----	$\#_{ns} = m_p / m_e \sqrt{\alpha}$

The Initial Condition of the Living Universe

The initial condition of the universe was not a gigantic explosion of pure spacetime energy but just a single anti-Hydrogen atom sitting at zero momentum rest in the centers of an infinite number of one-dimensional voids. All of the mass, momentum, angular momentum and charge energy of today's universe was contained within this single ground state atom. This initial state of atomic rest defines the temperature of absolute zero Kelvin = 0. The atom has the energy of its mass spinning in two different direction $e = mCC$, but its has no momentum to create external kinetic energy, nor does it have the two units of angular momentum $h/2\pi = 2$ needed to emit photons.

The Living Universe began with a standard model *positron* of constant and eternal mass and a standard model *antiproton* with slowly decreasing mass. The rate of antiproton or electron mass decrease is the true physical manifestation of time in the universe. It is this constant change in the values and properties of electrons that makes the atoms and neutrons of the past structurally different from the atoms and neutrons today.

The only constant in the Living Universe is the measured relationships between mass, space, time, and gravity and the calculated results for the force, momentum, angular momentum and energy of atoms and photons.

Nine Eras in the Universe's Evolutionary History of Matter and Photons

The history of the universe is represented below in nine separate intervals of electron/proton mass ratio time. The Living Universe has steadily evolved from the time when the negative/positive mass ratio of atoms of matter was $a/p = 1836/1$ until today when the electron/proton mass ratio is $e/p = 1/1836$. In the following equations, I use the symbol (c) for the relative linear speed of light and the symbol (C) for the absolute rotational speed of light so that the energy of the atom is $e = mCC$ and the energy of the photon is $e = mcC$.

An Arbitrary Beginning

a/p mass ratio 1836/1

Bohr radius $a_o = \alpha\lambda_\infty/4\pi = 1 = 5.292 \times 10^{-11}$

Fine structure constant $\alpha = 4\pi a_o/\lambda_\infty = .0073$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_o/\alpha = 9.11 \times 10^{-8}$

Neutron Stability Number $\#_{NS} = M_a/M_p \sqrt{\alpha} = 157$

A single antiproton/positron atom existed at the universe's "beginning". These two equal and opposite eternal energy/mass particles were coupled together by their mutual charge chains into a ground state anti-hydrogen atom. All of the universe's present-day energy/mass $e/m = CC$ was contained completely within the angular momentum and rotational energy of these two internally rotating particles. At this initial stage, the universe contains neither linear momentum $p = mv$ nor kinetic energy $e = mv^2/2$ and the two particles do not have enough angular momentum $h/2\pi = m\lambda C/2\pi = m_a a_o \alpha C$ between them to emit a photon. The mass of each particle was $m = e/CC$ and the energy of each particle was $e = mCC$.

The Antineutron Era

a/p mass ratio 146/1

Bohr radius $a_o = \alpha\lambda_\infty/4\pi = 12.5 = 6.615 \times 10^{-10}$

Fine structure constant $\alpha = 4\pi a_o/\lambda_\infty = .0000465$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_o/\alpha = .000179$

Neutron Stability Number $\#_{NS} = M_a/M_p \sqrt{\alpha} = 1$

At this interval, the antiproton mass decrease and size increase has reached the point where the neutron stability number goes from stable at 1- to unstable at 1+. This allowed the positron to be captured by the antiproton and create an antineutron without the need of any additional energy. The Living Universe was now a single antineutron sitting at zero momentum rest at a temperature of 0°K.

The God Particles of Creation

a/p mass ratio 10/1 to 1/10

Bohr radius $a_0 = \alpha \lambda_\infty / 4\pi = \infty$

Fine structure constant $\alpha = 4\pi a_0 / \lambda_\infty = 1/\infty$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_0 / \alpha = 4\pi$

Neutron Stability Number $\#_{NS}$ at $1/1 = M_a/M_p \sqrt{\alpha} = 0$

In this long interval of matter creation, the positron and antiproton within the anti-neutron became nearly identical in size and mass and were transformed from a stable antineutron into a virtually unstable antimatter/matter god particle that bifurcated into a nearly stable pair of antineutron neutron god particles. These were ejected at near the speed of light out along a one-dimensional void on opposite momentum vectors. After these two god particles had moved very far apart within their void, they reached the ends of their lifetimes and simultaneously bifurcated into two pairs of god particles. Then, after an even longer interval of time, these four god particles bifurcated again into eight and then eventually into 2^4 .

At this point, the Living Universe contained sixteen god particles, all rapidly moving in opposite directions along the eight individual one-dimensional voids of their momentum vectors. This began a long, slow process where the lifetimes of god particles slowly increased until after about $16^2 = 256$ bifurcations, they became stable and thus transformed into 2^{257} stable neutrons. Conceptually, the lighter negative antiprotons have become electrons and the now heavier positive positrons have become protons.

In this long multibillion year process, the god particles slowly but continually bifurcated simultaneously as they moved out along their voids to fill the universe with a cloud of stable neutrons. The Big Bang theory rejects this idea of gradual and synchronous matter creation in favor of the nearly instantaneous Guth inflation model that violates all known natural conservation laws.

Toward the end of this long process of god particles bifurcating into neutrons, they became so numerous that they occasionally collided with one another. This unbalanced their internal energy levels and caused the antimatter/matter pairs within them to immediately combine and then annihilate into a pair of gamma photons, instead of bifurcating into another pair of neutrons. By the time all of the god particles had finally transformed back into stable neutrons, the universe contained a large number of very high energy gamma photons moving in different directions. Today we still observe these photons as extremely energetic cosmic gamma rays.

The Neutron Cloud Bomb

e/p mass ratio 1/146

Bohr radius $a_0 = \alpha \lambda_\infty / 4\pi = 12.5 = 6.615 \times 10^{-10} \text{ m}$

Fine structure constant $\alpha = 4\pi a_0 / \lambda_\infty = .0000465$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_0 / \alpha = .000179 \text{ m}$

Neutron Stability Number $\#_{NS} = M_p / M_E \sqrt{\alpha} = 1 -$

At this point in cosmic history, the electron/proton mass ratio had reached 1/146.5 and the Neutron Stability Number passed from a stable value of less than one to an unstable value of greater than one. This caused all neutrons throughout the universe to decay with great synchronicity into rapidly moving electrons and protons. These 2^{257} high energy particles either collided and recoiled from one another or coupled together to form neutrons, alpha particles, nuclear isotopes, atoms, and chemical compounds. In this random process, nearly half of the universe's angular momentum and rotational energy was converted into the linear momentum and the kinetic energy of 2^{257} rapidly moving electrons and protons.

The Cosmic 2.7°K Grand Fire

e/p mass ratio 1/147

Bohr radius $a_0 = \alpha \lambda_\infty / 4\pi = 12.49 = 6.61 \times 10^{-10} \text{ m}$

Fine structure constant $\alpha = 4\pi a_0 / \lambda_\infty = .0000468$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_0 / \alpha = .000177 \text{ m}$

Neutron Stability Number $\#_{NS} = M_p / M_E \sqrt{\alpha} = 1 +$

The universe now consisted of rapidly moving electrons, protons, alpha particles, and other nuclear isotopes and atoms. The electrons immediately began coupling with atomic nuclei to form atoms. In this process, the kinetic energy $e = mv^2/2$ of their motions and the electron/proton ionization charge energy $e = mc^2$ were transformed into the energy/mass of photons $e/m = c^2$. At an electron/proton mass ratio of 1/147, atoms emit blackbody spectral photons at a temperature of about 2.7° Kelvin.

Eventually, the atoms emitted their last thermal photons and dropped down into ground states. The universe was now filled with mostly ground state atoms that had converted equal parts of their momentum and angular momentum into the energy of photons $e = mc^2$. These photons traveled the universe with constant conserved momentum $p = mc$, angular momentum $L_0 = m\lambda c/2\pi$, energy $e = mc^2$, and wavelengths $\lambda = 1/mc$. At this stage, the universe consisted of about 90% Hydrogen and Helium atoms with the remaining 10% consisting of atoms of the 2000 or so isotopes of the other elements.

Within this great cloud of atoms, the universe contained a background of 2.7°K blackbody photons combined with a separate background of high energy cosmic gamma photons, also with an overall temperature of approximately 2.7°K.

The Hubble Red Shifted Galaxies

e/p mass ratio about 1/900

Bohr radius $a_0 = \alpha\lambda_\infty/4\pi = 2.04 = 1.0796 \times 10^{-10}$ m

Fine structure constant $\alpha = 4\pi a_0/\lambda_\infty = .00175$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_0/\alpha = 7.75 \times 10^{-7}$ m

Neutron Stability Number $\#_{NS} = M_p/M_E\sqrt{\alpha} = 37.6$

After another very long interval of time, most atoms in the Living Universe had gathered together into clouds, planets, stars, and galaxies. The most distant of these galaxies that we can see today with the Hubble telescope emitted red shifted photons with wavelengths of about $Z = 9$. As electron mass constantly decreases, it caused both the Bohr radius and the fine structure ratio to decrease proportionally. This increased the energy and temperature at which atoms emit spectral photons. At this stage in electron evolution, the galactic spectral photons emitted by atoms with heavier electrons, all had wavelengths that were about 8.5 times longer than the same spectral photons we measure here on Earth or in nearby galaxies. We can conclude from this, that these distant galaxies remain relatively stationary and are not expanding away from one another at relativistic speeds.

The Dark Energy Myth

e/p mass ratio 1/1600

Bohr radius $a_0 = \alpha\lambda_\infty/4\pi = 1.148 = 6.075 \times 10^{-11}$ m

Fine structure constant $\alpha = 4\pi a_0/\lambda_\infty = .0055$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_0/\alpha = 1.39 \times 10^{-7}$ m

Neutron Stability Number $\#_{NS} = M_p/M_E\sqrt{\alpha} = 119$

It is from this next era in the Living Universe that astronomers have recently observed that distant, but still measurable, supernova explosions have considerably less energy and intensity than the supernova explosions in nearby galaxies. The Big Bang enthusiasts have tried to explain this energy loss with an imagined antigravity repulsive force called Dark Energy. However, this well established effect of increasing supernova intensity is simply the expected result of decreasing electron mass. At this point in cosmic time, supernovas emitted spectral photons with about 65% less energy and longer wavelengths than the same spectral photons we measure in nearby supernovas.

Dinosaurs Ride Along on the Continents

e/p mass ratio 1/1800

Bohr radius $a_0 = \alpha \lambda_\infty / 4\pi = 1.02 = 5.506 \times 10^{-11} \text{ m}$

Fine structure constant $\alpha = 4\pi a_0 / \lambda_\infty = .00702$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_0 / \alpha = 9.9 \times 10^{-8} \text{ m}$

Neutron Stability Number $\#_{NS} = M_p / M_E \sqrt{\alpha} = 151$

At this stage of the Living Universe, the very large dinosaurs that roamed Earth were able to easily walk, run, and maneuver even though biologists and physiologists claim that their great bulk when have made this impossible. This can only be explained by the reduced surface gravity of a much larger and less dense Earth.

The decreasing mass of the electron and the decreasing dimension of the Bohr radius causes atoms to become smaller and denser with time. This is because, within atoms, the electrons and protons are coupled together at the Bohr link in the atomic radiation chains. The Bohr link that holds the Hydrogen atom together is considerably larger than the 79 Bohr links that hold a gold atom together. As Earth's atoms continued to shrink, from the time of the dinosaurs, the light elements near its surface shrunk at a faster rate than the heavy elements at its core. As light elements in the layers of Earth's mantel contract faster than the heavy elements in underlying layers, cracks open up in Earth's continents and they appear to move apart in the observed processes of sea floor spreading and plate tectonics. Geologists have gotten plate tectonics backwards. Earth's surface layers are actually shrinking and cracking like mud on the bed of a dry lake.

Today, the Evolution of Physics in Living Universe Continues

a/p mass ratio 1836/1

Bohr radius $a_0 = \alpha \lambda_\infty / 4\pi = 1 = 5.292 \times 10^{-11} \text{ m}$

Fine structure constant $\alpha = 4\pi a_0 / \lambda_\infty = .0073$

Hydrogen ionization photon $\lambda_\infty = 4\pi a_0 / \alpha = 9.11 \times 10^{-8} \text{ m}$

Neutron Stability Number $\#_{NS} = M_p / M_E \sqrt{\alpha} = 157$

Today we use our accelerometers to measure the momentum and angular momentum in Living Universe from our moving position on Earth. Historic measurements of the electron/proton mass ratio of 1/1836 are beginning to show, that today, the ratio has increased to 1/1836+? As electron mass continues to decrease, the increasing momentum and ionization energy of atoms is continually being converted into photons with more energy and shorter wavelengths. This causes stars to get hotter and warm the uni-

verse. However, the universe's total increase in temperature from radiating stars is still a tiny fraction of the original 2.7°K temperature of the Cosmic Blackbody Radiation or the similar thermal temperature of the Cosmic Ray Photons.

Today, in the Living Universe, all of the Hubble galaxies are emitting spectral photons that are identical to photons measured here on Earth. When these photons eventually reach us, they will still appear red shifted but we will measure a warmer universe. The quantity of universal momentum and angular momentum that is being converted into photons is constantly increasing. This is the second law of thermodynamics. Entropy is photon energy/mass lost to one-dimensional voids. Entropy is balanced by the amount mass/energy in two-dimensional voids. The cooling effect of entropy is balanced by the warming effect of the decreasing Bohr wavelengths and the increasing temperatures of thermal radiation photons.

When the atoms first formed, during and just after the great cosmic Grand Fire, the neutron stability number was slightly greater than one and the neutron was virtually stable. During this time, there was a frenzy of nuclear synthesis where most of the protons and neutrons combined into nuclear isotopes and most of the electrons coupled with them to form atoms and emit 2.7°K photons. At the time of the Grand Fire, the vast majority of the chemical element's approximately 2000 isotopes were virtually stable. Since then, electron mass has steadily decreased and the value of the neutron stability number has steadily increased. As a result, once stable isotopes began decaying, one after another. Today, with a neutron stability number of 157, the chemical elements only have 282 stable isotopes left. In the distant future, there will be less as the Living Universe continues to evolve.

It will be a very long time before there are no longer enough stable isotopes for humans to get by on. I would think the metallic isotopes like Gold and Palladium would disappear long before we have to worry about losing any of the lighter isotopes vital to our bodies like carbon and oxygen. Long after we are gone, and the last alpha particle has decayed, the Living Universe will die a quiet death as a cloud of pure hydrogen gas containing exactly 2^{256} atoms. The universe began as a solitary ground state anti-hydrogen atom with a mass of one and no kinetic energy. The Living Universe will end as 2^{256} individual ground state atoms each with a mass of $1/2^{256}$ and no kinetic energy. There will still be a few photons around but most will have been lost within their voids. All is conserved. *One day it will all end. Enjoy it while you can.*