

# Hacking the DNA toolbox

October 2025

Gene H. Barbee

## Abstract

Artificial intelligence technology mimics some aspects of brain function with layers of probability calculations. DNA base pairs consist of AI-like layers and an amazing toolbox. They represent an entire organism but how they store the parent image and position cells accurately in offspring is obscure. I developed a model of the neutron, proton and electron that represent probabilities that may be carrying out functions needed by DNA to perform its tasks. The proton model describes energy-based features that would allow the DNA layers to position particles, exert forces to separate cells after cell division, store and recall images. Recalling long term visual images is interesting. Where the images are stored and how they are recalled over long periods of time needs to be better understood. The proton model provides a method of “time stamping” information for later recall.

The continued motivation of this work is to understand the role of information in our universe. The author believes there are two levels to nature 1) an information level 2) a correlated energy level. This belief is based on data that leads to an information-based proton mass model. This model helps us understand nature.

Duplication of protons creates the huge universe around us. Information from the proton model provides information that underlies a cosmological expansion model based on an accurate definition of time and space.

## Time and space.

The models below help us understand that information underlies physical reality. Information is defined by Shannon [2] as  $N = -\log_2(P)$ . Probabilities are clearly fundamental to quantum mechanics, but they are also fundamental to time and space.

Time and space are defined by a time circle. Time starts at zero and moves around a circle and repeats after one cycle. The distance around the time circle is distance ( $d = C \cdot t$ ). The relationships below indicate that a probability  $P = t \cdot e_0 / H$  circles with time  $t$ . But time also moves the other direction around the cycle.  $P = e_0 / E$  also circles with time. Time and space are based on dividing these two probabilities  $P/P = 1 = Et/H$ . The diagram below shows probabilities associated with  $t$  and  $E$ .

$P = t \cdot e_0 / H$	7.18E-06
$t$	1.47E-21
	1
$E$	2.811
$P = e_0 / E$	7.18E-06
$P/P = Et/H = 1$	1

Quantum mechanics agrees with this, according to the Schrodinger equation  $P = \exp(-i \cdot Et/H) \cdot \exp(i \cdot Et/H) = 1$  [Appendix 1]. Energy and time enter nature through the unity  $Et/H=1$  where E is energy and t is time.  $Et/H=1$  is modelled as time moving at C around a circle of radius  $r = hC/E$  [Appendix 1][25]. Cycles are shorter (frequency=1/t) when energy is high. H is a conversion constant called the Planck constant. Point P=1 only occurs once per cycle, and the rest of the time energy is a probability.

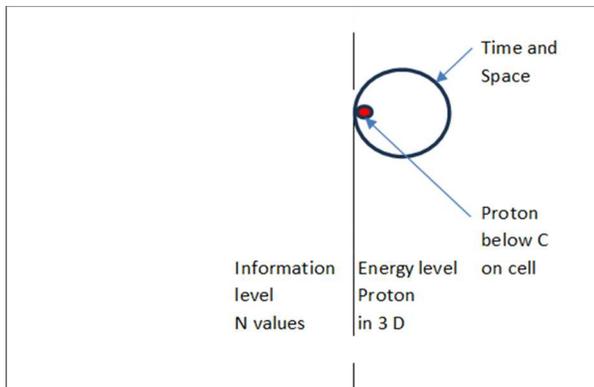
### Our position in space and time.

The proton model provides more insight into why P/P=1 matches are important. To “stream” meaningful probabilities into our mind for perception our viewing position must be at point P=1.

The proton model provides the specific P=1 match that positions us in time and space. The mind’s 3-dimensional viewpoint is at the proton model’s X, Y and Z information/energy interface below. The specific probabilities associated with 3-dimensions are probabilities from the proton model (see title below “Neutron and Proton models”).

N	Probability $P=1/\exp(N)$	Field energy $E=e_0 \cdot \exp(N)$
10.43	$P=1/\exp(10.43)$	0.687 X
10.43	$P=1/\exp(10.43)$	0.687 Y
10.43	$P=1/\exp(10.51)$	0.687 Z
10.51	$P=1/\exp(10.43)$	0.740
		<b>2.801 MeV</b>

The energy from the model that creates space and time at the X, Y, Z interface is  $E=2.801$  MeV. The probability for time circling one direction is  $P=t \cdot e_0/H = 7.18e-6 = 1/\exp(11.84)$ . The probability circling the other directions is  $P=e_0/E = 7.18e-6 = 1/\exp(11.84)$ . In the model below, the proton is shown at the point P=1 in time and space.

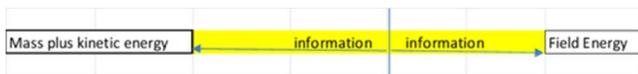


### Perception is based probabilities circling with time.

Probability= 1= P/P is your perception of time and space viewed from the information/energy interface above. We consist of neutrons, protons, and electrons. Our mind has no choice about seeing other protons around it in 3 dimensions (dimensions are information, not energy) because these circling probabilities are streamed straight to our perception at P=1.

One proof of our minds P=1 position is that we are moving rapidly but our reference point stays inside our minds. Our position on the information side of the interface allows it to perceive outside nature that consists of configurations of protons, neutrons, and electrons. It is able to perceive light coming from outside because internal components of your protons define electromagnetic energy. Our information-based minds have a memory, perceptions, and thoughts. It is continuously searching for matches. Memory consists of probabilities circling with time and perception is P/P=1 matches.

With the discovery of the equation  $E=2.02e-5*\exp(N)$ , the proton model indicates that there are two levels to nature 1) an information level and 2) an energy level. To be clear, protons do exist, but our mind evolved by using their information level. Reality is perceived information about the real world around us. We consist of particles but the ones in our DNA are special because they have been adopted into our life network to perform important tasks.



## THE NEUTRON AND PROTON MODELS.

The neutron and proton models are based on zero energy and probability=1. The energy components of the proton model have N values with probability  $1/\exp(N)$  that divide to P=1. For the entire proton,  $P=1 * 1 * 1 * 1 = 1$ .

Neutron				Proton			
N values for mass	E=e0*exp(N)	N values for fields	E=e0*exp(N)	N values for mass	E=e0*exp(N)	N values for fields	E=e0*exp(N)
12.4319	5.076	10.432	0.687	12.432	5.076	10.432	0.687
15.432	101.947	17.432	753.291	15.432	101.947	17.432	753.291
12.432	5.076	10.432	0.687	12.432	5.076	10.432	0.687
13.432	13.797	15.432	101.947	13.432	13.797	15.432	101.947
12.432	5.076	10.432	0.687	12.432	5.076	10.432	0.687
13.432	13.797	15.432	101.947	13.432	13.797	15.432	101.947
Z components				W components			
E=e0*exp(N)	Z Field	E=e0*exp(N)		E=e0*exp(N)	W field	E=e0*exp(N)	
-10.432	-10.432	-10.432		-10.432	-10.432	-10.432	
10.507	0.740	10.507	0.740	10.408	0.671	10.507	0.740
10.333	0.622	10.333	0.6224	10.136	0.511	10.333	0.622
				0.296	2.72E-05		
90.000		90.000		90.0000		90.000	

Figure 1 Neutron and Proton model.

In the model above N is information. The relationship between N and Energy is  $E=e0*\exp(N)$  MeV where  $e0=2.02e-5$  MeV [Appendix 1 title "Energy data correlations with information"]. N for mass and N for kinetic energy are next to their respective energy values in the two columns on the left. The right two columns are N and field energy. N for these energy values always have  $0.333+.0986=0.4319$  after a whole base 10 numbers that are different by 2. The value 0.0986 is  $\ln(3)-1$ .

N values for mass	E=e0*exp(N)	N values for fields	E=e0*exp(N)
12.4319	5.076	10.432	0.687
15.432	101.947	17.432	753.291

The here are four layers of values like 12.432+15.432=10.432+17.432 in Figure 1. The neutron on the left side of figure 1 decays to a proton, electron, and anti-electron neutrino on the right side. Details are in Appendix 1.

Energy values from Figure 1 ( $E=e_0*\exp(N)$ ) above are arranged into columns below for clarity. The components add down through the table below and simulate the mass of the neutron and proton marked in red below (accuracy vs the Particle Data Group data is excellent). It is a particle-space model because it includes initial expansion kinetic energy 10.15 MeV and expansion potential energy 10.15 MeV. The energy  $E_2+E_2= 10.15$  MeV is also fundamental to atomic fusion.

		MeV		MeV		MeV		MeV	
		Neutron Mass Components		Neutron Field Components		Proton Mass Components		Proton Fields	
		101.947	Mass	753.291	Strong Field E	101.947	Mass	753.291	
		13.797	Mass	101.947	Strong Field E	13.797	Mass	101.947	
		13.797	Mass	101.947	Strong Field E	13.797	Mass	101.947	
		5.076	Ke	2.801	Gravitational Field	5.076	Ke	2.801	
		646.955	Difference KE			646.955	Difference KE		
		83.761	Difference KE			83.761	Difference KE		
		83.761	Difference KE			83.761	Difference KE		
		10.151	Fusion KE			10.151	Fusion KE		
		-20.303	Weak Field E			-20.303	Weak Field E		
						-0.622	minus quark mass		
	accuracy vs PDG	0.622	adds to quark mass		accuracy vs PDG	-0.048	ae neutrino		
		-7.18546E-09		-0.118		-0.0000096	Em Field +2	-0.118	
		939.5654133	939.565413 Neutron mass			938.2720814	938.27209		
	PDG				PDG	2.72E-05	EM Field -1		
						0.511	Electron		
						0.671	622+.048		
						0.11141	Kinetic E		
		10.15127081	KE Expansion			10.15	KE Expansion		
		10.15127081	PE Expansion			10.151	PE Expansion		
		959.8680		959.8680		959.8679		959.8680	

Figure 2 Neutron and Proton mass.

### Probabilities in the model.

The proton model is based on probability =1. Examine the sets of probabilities in Figure 1 for the proton. Probabilities for the left-hand side of the model (mass plus kinetic energy) are multiplied and then divided by probabilities for the right-hand side fields.

$$1=(1/\exp(12.43)*1/\exp(15.43))/(1/\exp(10.43)*1/\exp(17.43))$$

$$1=(1/\exp(12.43)*1/\exp(13.43))/(1/\exp(10.43)*1/\exp(15.43))$$

$$1=(1/\exp(12.43)*1/\exp(13.43))/(1/\exp(10.43)*1/\exp(15.43))$$

$$1/EXP(-10.432)*1/EXP(10.408)*1/EXP(10.136)*1/EXP(0.296)/(1/\exp(10.33)*1/\exp(10.408)*1/\exp(10.33))=1.$$

### LESSONS FROM THE PROTON MODEL.

- 1) We can learn about components of the neutron and proton by studying the model. The defining relationship discovered in the data in Appendix 1 between energy and probability is  $E= e_0*\exp(N)$ . Probability is  $p=1/\exp(N)$ . Combining these equations yields the relationship  $p=1/(E/e_0)= e_0/E$  which is a number (no units). The value  $e_0=2.02e-5$  MeV.

2) The probabilities below are the top line of the proton model:

$$(1/\exp(12.43)*1/\exp(15.43))/(1/\exp(10.43)*1/\exp(17.43))=1$$

It was pointed out above that probabilities continually circle with time. The model teaches us what the expression above means: N=12.43 is associated with kinetic energy and N=15.43 is associated with a quark mass. N=10.43 is associated with a field that defines dimensions and N=17.43 is associated with a color field. The probabilities 1/exp(N) circling with time means a quark is orbiting radius r. The model is based on zero energy, and the left side probability is p=1/exp(17.43). The right side of the model is also p=1/exp(17.43). The result shown below is the circling probability that means the particle is orbiting at radius r. The constant allows us to interpret the code as radius in units we historically use.

<b>R=9.75E-9*1/EXP((17.431+17.431)/2)</b>
if N for field= N for mass+ke, this becomes:
r=9.75e-9*1/exp(17.432)= 2.619e-16 meters
2.619E-16

The first three lines of figure 1 means three quarks with kinetic energy are positioned in color fields at radius r. These mass of these layers are added to represent the mass of the proton. Probabilities for the layers are multiplied. P=p\*p\*p\*p =1 with each p=1 but a great deal of information is hidden in p=1.

The left side of the model obeys the Pauli exclusion principle that states, “no two particles can occupy the same space” and it is different that the right-hand fields that are more gregarious.

3) Other important quantities like force can be written with probabilities p=1/exp(N). Here is an example:

F=1/(hC)*e0^2*(exp(N))^2		
F=E/r		
E=e0*exp(N)		
r=hC/eo*1/exp(N)		
F=e0*exp(N)/(hC/eo*1/exp(N))		
F=1/(hC)*e0^2*(exp(2N))=3.3282e-10*exp(2N) Newtons		

See Appendix 6 title “Origin of the gravitational constant, G”.

4) Time and space were defined above with the equation r=hC/E where E = gravitational field = 2.801 MeV (field components from the proton model below = 0.69+ 0.69+ 0.69+ 0.740 = 2.801 MeV).

Identify the radius and time for the gravitational orbit with 2.801 MeV
Fundamental radius= $hC/E=1.97e-13/2.801=7.04e-14$ meters
Fundamental time= $7.04e-14*2*\pi()/3e8=1.47e-21$ seconds

5) The expression below is the fourth layer of the proton model.

$$1=1/\text{EXP}(-10.432)*1/\text{EXP}(10.408)*1/\text{EXP}(10.136)*1/\text{EXP}(0.296)/(1/\text{exp}(10.33)*1/\text{exp}(10.408)*1/\text{exp}(10.33))$$

This layer represents the orbital radius of an electron.

$r=hC/E$			
E for the orbit is (field energy*mass+kinetic energy)^.5			
<b><math>r=9.75e-9*(1/\text{exp}((N2+N2)/2))</math> meters</b>			

For the electron mass  $N1= 10.1359$  and  $N2=0.296$  for the electromagnetic field and the orbit is  $5.29e-11$  meters.

<b><math>R=9.75E-9*1/\text{EXP}((10.136+0.296)/2)</math></b>			
<b>5.294E-11</b> meters			

The N value 10.136 is associated with electron mass (0.511 MeV). The N value 0.296 is associated with the electromagnetic field energy (27.2e-5 MeV). The overall expression is a switch that changes a neutron in a proton. It is in the proton position above. Here is the neutron position:

$$1=1/\text{exp}(-10.432)*1/\text{exp}(10.507)*1/\text{exp}(10.333)/((1/\text{exp}(-10.432)*(10.507)*10.333))$$

The N values in Figure 1 add to 90 for both the proton and electron. The mass for the neutron is larger than the proton by 1.293 MeV.  $N=10.333$  is associated with 0.622 MeV and  $N=10.408$  is associated with 0.671 MeV. The neutron loses  $1.293=0.622+0.671$  MeV when the switch changes positions and becomes a proton, electron, and anti-electron neutrino. Furthermore, the expression tells us when it switches. The difference  $0.622$  MeV minus  $0.511$  MeV =  $0.111$  MeV. The early universe has a temperature associated with 10.15 MeV. Expansion cools the universe and when it is reduced to 0.111 MeV, neutrons start to decay to protons. Electrons do not fall into orbits around protons until the temperature is much lower.

### Summary of circling probabilities in the proton model.

Probabilities are different combinations of  $1/\text{exp}(N)$  values for the four energy pairs.

1. Mass of the proton, neutron, and electron.
2. Fundamental time and radius.
3. Radius of the quark orbits, electron orbits, and weak orbit.
4. Six of the entities in the Standard model characterized in a book entitled "A Beautiful Question" by Frank Wilzek [10][9] have a quark linked to a single field. Other entities have a quark influenced by two fields. With two fields the quark responds in

two dimensions, creating planes rather than one dimensional confined axis. Protons contain basic properties like those listed below for use by DNA.

#### PROPERTIES

---

X, Y, Z

REVERSE X,Y,Z

PLANES XY, YZ AND XZ

AROUND CIRCLE LEFT AND RIGHT ---TIME

HANDEDNESS (PARITY)

CHARGE UP or DOWN

SPIN

There are only protons, neutrons, electrons, light, bosons, a few anti-particles in nature and short-lived particles called mesons and bosons. I have thoroughly studied all these particles, and they all consist of pre-cursors or components described by the proton model [13]. The energy of these particles is associated with information. Many will question why nature must start with numbers. They represent a fundamental way of describing energy without referring to other energy. Information and energy are the two sides of nature. Information values N is probabilities  $1/\exp(N)$  that create the energy universe around us. These particles orbit because their probabilities circle with time. The circling probability components of the proton can store energy, radius, and forces for use by living systems.

These particles are literally the only thing that exist, but each particle has an information side that stores and recalls useful information for life processes. Our mind's position allows it to perceive probability interactions.

### **DNA PROTONS.**

The discussion above indicates that memory consists of probabilities circling with time. The language we learned is encoded as probabilities continually circling with time. Perception is a series of  $P/P=1$  matches between input and stored probabilities. Stored probabilities may be  $P=e^0/E$  associated with fields that have been multiplied into composites. Input may be associated with  $P=e^0*t/H$  where the t is transmitted via nerves to the brain where it searches for specific words out of the entire language.

The DNA base pairs are in layers held in place by their sugar backbones. But the base pairs themselves are molecules with atoms (protons and neutrons) connected by electrons. The nucleotides A, T, G and C represent the body like a language represents meaning to our mind. Evolution trained the strings of information to mean many things. It's molecules may contain proton component circling probabilities waiting for a match that can trigger energy interface output like forces. I will show below that they can store positions and exert forces for reproduction of an organism. Topics below will discuss DNA protons in our neurons that provide information for color vision. I will also show how visual images can be time stamped for later recall. The DNA molecules provide structure that positions protons throughout its layers, and

they are in every cell of our body. This is a powerful system because it uses “it’s inside viewing point” to select probabilities that sense and control energy-based processes.

mass		S field			
ke		G field		DNA	
15.43194562		17.43194562			
12.43194562		10.43194562		A	T
13.43194562		15.43194562			
12.43194562		10.43194562			
13.43194562		15.43194562		G	C
12.43194562		10.43194562			
-10.33333333		-10.33333333			
10.40832627		10.40832627		A	G
0		10.33333333			
10.33333333		0			
90		90			

### Evolution.

Evolution is the process of new information being accepted into a network. The criterium for acceptance is that it contributes to survival of the associated organism. The associated organism originally consists of protons that consist of many circling probabilities. Early evolution is associated with molecules that sense light (P/P involved) to find energy sources. Each of our molecular protons has electromagnetic connections to many neighbors. These form functional layers in single cell animals (lipids, etc.). There is no reproduction until parent information can be stored and recalled. These information storage sites become DNA molecules. Information storage consists of probabilities that circle, searching for other probabilities in the life network. The pre-existing information level of protons helps us understand life. A long period of single cellular organisms eventually evolved into multi-cellular organisms. Layers of cells containing DNA became brain information centers that helped the organism survive in a challenging environment.

Every proton consists of an information level and an energy level, but it is the combination of information levels that allows us to think. Our viewing position is from within the protons in our brain and we have no choice; we see things (protons around us) in three dimensions. Our internal reality is probability search at the information level, but we know that other protons around us are also real.

### BODY REPRODUCTION.

Flowers and babies develop before our eyes. When a flatworm is cut in half, it generates two flatworms. Where is the frog image stored [16] when nature decides that a tadpole must form a frog? How exactly does DNA perform this incredible task? Images associated with plants and animals are a mysterious aspect of nature.

### Protons as cell positioners.

Above it was proposed that proton probabilities for radius and forces are circling, waiting to be used. Evolution is searching for solutions to its survival problems. When it finds a probability match that unleashes what the proton can provide it enhances survival and is stored in memory as P/P meanings. Probabilities are a toolbox of things needed for DNA to perform its function.

The body starts as single cells that divide. The cells are produced by the DNA code. It is proposed that each new cell needs instructions that tells it what kind of cell it is and push it

(apply forces in X, Y and Z) to its historical position. A proton containing instructions passes its function down through generations of the the organism. The diagram that applies shows dimensions X, Y and Z and the applied force F. Delta X, Y and Z are each one cell width (1e-5 meter) and combine into a specific angle. The electron part of the proton model contains an electromagnetic field that provides the energy required to move the newly divided cell to its new location. This is shown on the right-hand side of the diagram associated with X, Y and Z.

N	Energy	N	Energy	Force for direction
12.43195	5.075635	10.432	6.87E-01	8.24E-08
15.43195	101.9469	17.432	7.53E+02	X
12.43195	5.075635	10.432	6.87E-01	8.24E-08
13.43195	13.79701	15.432	1.02E+02	Y
12.43195	5.075635	10.432	6.87E-01	8.24E-08
13.43195	13.79701	15.432	1.02E+02	Z
		10.136		
		0.296	8.24E-08	F
			2.72E-05	E mev
			5.29E-11	r meters
			8.24E-08	F=E/r (Nt)

Traits are size, colors or shapes that the proton can represent as probabilities with energy and time values. The trait is the evolved meaning of the P/P=1 match. The DNA molecule contains the information for the entire body of an organism. There are many probabilities associated with time and energy searching for matches. This occurs at light speed down through the chains of protons.

As new moments in time are experienced, previous information can always be integrated into the present. This information is encoded in  $P=e0*t/H$  that circles with time. Information from the parent cell pushes explains how growth occurs. DNA has enough historical cell pushers circling to position all the cells. DNA also has enough information to create specific cells, but it needs to know what kind of cell to produce and where it will be located. When a cell divides, it searches for its identifier and pusher that will push it to its historical X,Y and Z position. The new cell produces  $P=e0/E$  when the cell divides. The match activates its pusher to exert its force. This is like a huge Lego set that contains  $3e10$  pieces (cells in a human) with  $3e10$  simultaneous construction sites. It depends on very accurate placement and identity instructions for new cell. Once the cell is in place, the remainder of the DNA does its job of reproducing the appropriate proteins. The sequence of placing cells repeats and the daughter cells reproduce the organism or plant. The organism retains its basic shape as it grows but there are new features that appear based on the sequence of cell division. Specific molecule pairs given the names A,T,G and C have thousands of protons. There are about  $4e15$  protons in each DNA chain. The  $8e6$  pusher protons are a fraction of its storage capacity.

**How does the cell location database end up in each DNA molecule?**

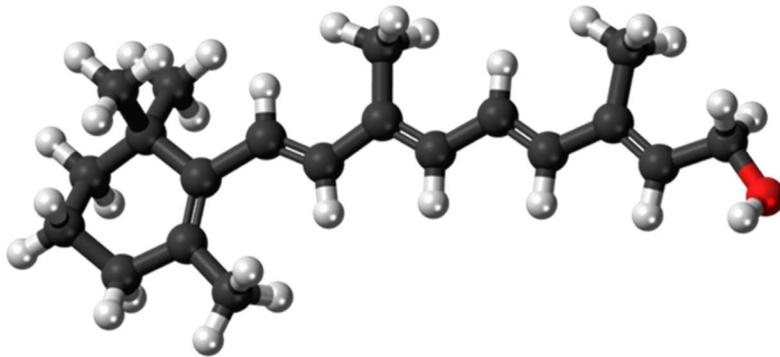
During evolution historical cell pushers and cells may change. But protons are highly connected with electro-chemical networks. Before it dies, the entire data base is transferred to the sperm or egg cells DNA for the next generation. The transmission is aided by neurons and axions but each strand of DNA and their associated information level protons contains the entire database.

### What about thought?

Some would agree that DNA results in the body of a human, but what about brain operations? It is possible that the organism is using DNA protons in brain cell to find P/P matches that mean muscle control. There is supporting evidence. Many animals have muscle control at birth. Muscle control is evidence of a brain that has some pre-programming. This could be stored in its DNA protons because they contain the electromagnetic energy to fire cell muscles.

### MOLECULES THAT ARE SENSORY COMPONENTS

Each proton in the atoms attracts an electron and creates orbitals. This in turn creates a valence and rules for how atoms interact. This creates molecules. Evolution has developed eyes many times based on a series of stored wavelengths that respond to light absorption described by the Feynman equation [23]. Retinol and rhodopsin molecules in the retina are part of a visual cycle [1]. These molecules are suited for electron-based sensors because they contain conjugated bonds with progressively lower energy levels (progressively increased wavelengths along the molecule are stored information). Retinol has the following structure (downloaded from Wiki). The conjugated bonds along the chain are C=C—C. Perhaps the rhodopsin molecule's use as a sensor was evolutionary, and vision gives the developing organism a competitive advantage, but the conjugated bonds are important.



**Rhodopsin molecule.**

### Electron quantum shifts.

When the electron falls into the proton's field energy, it gains kinetic energy and loses potential energy. The kinetic energy gained is  $27.2e-6/2=13.6e-6$  MeV balanced by potential energy. Subsequently, the electron can fall further described by electron orbitals.

N	Binding Ener	Quantum no	Quantum no	Delta Energy	Width	WL Color	D meters
		2	3		nm	nm	$D=1e-9/(1/(WL-Width)-1/WL)$
0.296	1.36E-05	3.40E-06	1.51E-06	1.89E-06	61.24	656.05	6.37E-06

Recalling that the quantum number for the orbit reduces the kinetic energy in the orbit by  $1.36e-5/Q^2$ , where Q is a quantum number [Wiki]. The quantum number for the orbit reduces the kinetic energy in the orbit by  $1.36e-5/Q^2 = 3.4e-6 - 1.51e-6 = 1.89e-6$  MeV, where Q is 2 and 3.

### Color vision.

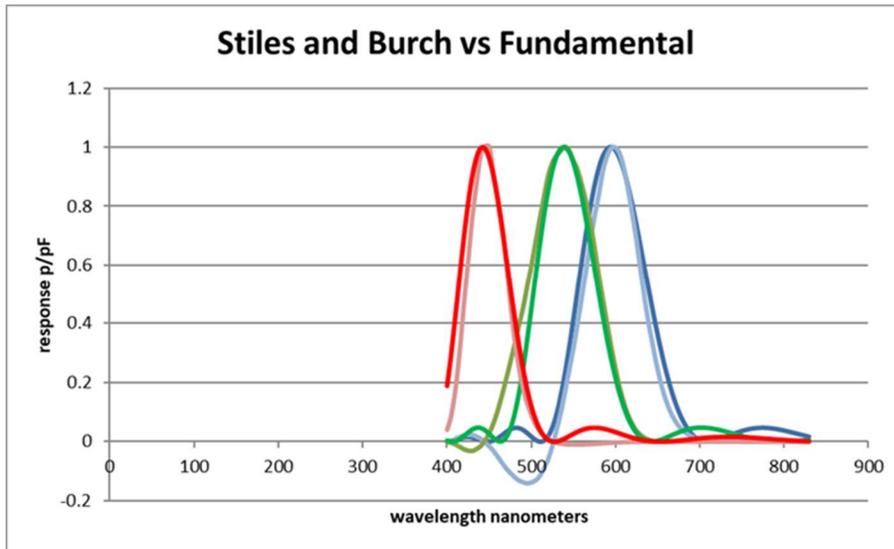
The eye's response to colors does not follow the electromagnetic orbitals beyond Q= 2 or 3. It will be shown that an important wavelength (656 nanometers) is further changed by probability  $(.906^n * 656)$ , lowering energy and increasing the wavelength. For our visual system, the probability  $0.906 = 1/\exp(0.0986)$  and n increases from 1 to 4. Energy conjugation occurs when some bonds are single bonds and others are double bonds. The information value  $N = 0.0986$  from the proton model is the basis of a good color match of the four peaks wavelengths involved.

multiple	N	P=1/EXP(N)	P*E/M	P*E/M	E-E	perception is in the eye	
		1	3.00E-05	2.72E-05	2.82E-06	439.52	scotopic
1	0.0986	0.906093943	2.72E-05	2.47E-05	2.56E-06	485.07	green
2	0.1972	0.821006233	2.47E-05	2.23E-05	2.32E-06	535.34	blue
3	0.2958	0.743908775	2.23E-05	2.02E-05	2.10E-06	590.82	red
4	0.3944	0.674051235	2.02E-05	1.83E-05	1.901E-06	652.05	Quantum basis

Your eye spreads light into a 3 D matrix [2]. Signals proportional to the eye's color absorption are transmitted to a neural network in the brain. It is known that nerves transmit pulses to the brain, but they are not fully understood. I believe they are time values for the probability  $P=e0*t/H$ .

P=t*e0/H		8.66E+00	
t from eye	0.9	1.77E-15	
E		2.10E-06	
P=e0/E	red	9.63E+00	
P/P=Et/H=1		0.90	Color
			Perceived

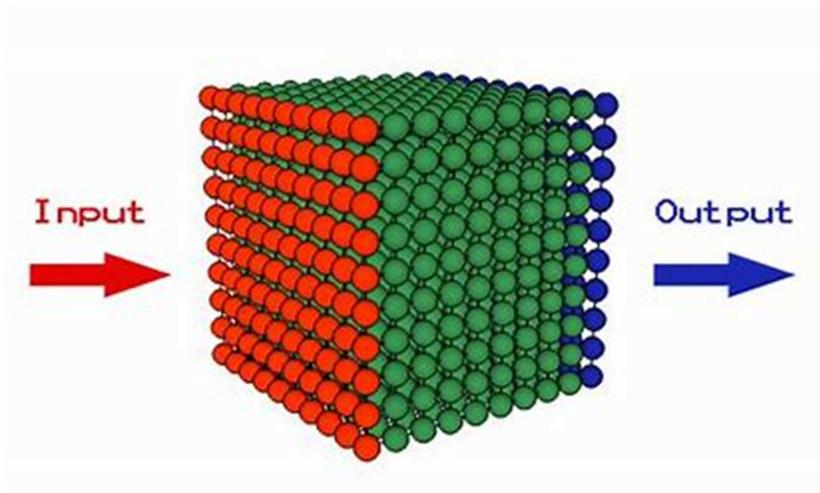
The brain DNA protons hold the reference wavelength to interpret these signals as color. These probabilities are  $P=e0/E$ . The E difference for color red is  $2.1e-6$  from the row labelled 3 in the table. In the example above, the eye generated t values fall slightly off true red. Your brain searches for matches between the two probabilities. Read the table [1] below for probability 0.9 for the color perception  $P/P=0.9$ . The color experienced will be a slightly different hue.



The DNA proton that accomplishes this is shown below. The base wavelength is  $13.6e-6/2^2 - 13.6e-6/3^2 = 1.9e-6$  MeV (656 nanometers).

N	Energy	N	Energy			
12.43194562	5.075635407	10.432	0.68691256			
15.43194562	101.9468624	17.432	753.291085			
12.43194562	5.075635407	10.432	0.68691256			
13.43194562	13.79700749	15.432	101.946862			
12.43194562	5.075635407	10.432	0.68691256			
13.43194562	13.79700749	15.432	101.946862			
		10.14	0.511	base color		
		0.29	2.72E-05	$13.6e-6/2^2 - 13.6e-6/3^2$		
				1.89E-06 (652 nm)		

The brain has evolved with layers of cells with DNA protons in each cell. They are arranged in an X, Y, Z matrix. Each cell is a “pixel” in the matrix and there is probably one proton for each color. When a match is made the pixel contributes to the overall-colored image in 3-dimensions.



There are DNA protons in every cell of the matrix above. Each color depends on input from the eye. Signals reach a matrix of brain cells that use proton  $P=e_0/E$  information to match eye time probabilities  $P=e_0*t/H$  with proton energy probabilities that represent colors. The matches produce 3-dimensional image inside the brain.

### Energy based sensors.

The proton information interface is used by the body to perform important energy based functions.

CELL TYPE	CELL FUNCTION			Proton store and recall	
	Memory		Mind	Neuron DNA	
	Connectivity			DNA protons	
Brain	Sense		Vision	Molecule sensors	
Sensory			Touch	DNA protons	
			Sound		
			Smell/Taste		
Body	Development of Body		Body	Grav E	
				E/M action	

### Visual memory recall.

How is an image stored in long term memory? The diagram in the title above “Color vision” is active color vision. It is stored for later recall with several changes 1) freezing the input 2) time stamping the images 3) bringing the information forward into the new now so it contains the entire image database 5) searching the images for matches that trigger the recall.

While the sensors are active, the brain perceives the color image as a 3D matrix associated with layers of brain cells that contain DNA. The pixels in the image are P/P matches but they fade quickly to free up the brain for the next visual image. P/P is a new probability that continues to circle with time. The entire image of pixels needs a time stamp for later recall, and this function can be provided by proton probabilities. They also may need to be assigned a “ meaning weight” (like an AI probability surface) to help search for matches later. Proof of this capability is the fact that we learn.

Fundamental radius is  $r = hC/E$  where  $E = 2.801$ . The time around this radius is  $t = 2\pi/C = 1.47e-21$  sec.  $P = e0t/H = 7.2e-6$  shown in the table below is an initial circling probability time stamp.

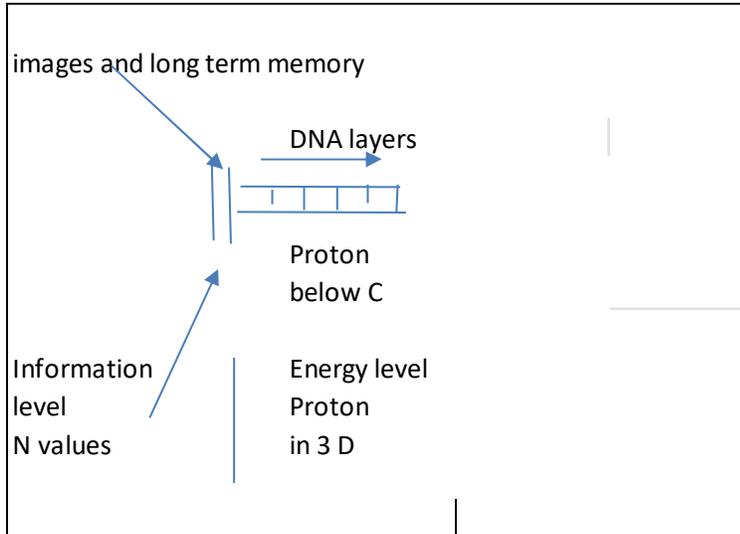
		N	Energy	N	Energy	Results added
		12.432	5.076	10.432	0.687	
		15.432	101.947	17.432	753.291	
		12.432	5.076	10.432	0.687	
		13.432	13.797	15.432	101.947	
		12.432	5.076	10.432	0.687	0 time
		13.432	13.797	15.432	101.947	7.045E-14 radius
				10.140	0.511	7.21184E-06 $P = e0*t/H$
				0.290	2.72E-05	1.4755E-21 time around
						2.801 $E = t/H$
multiple	N	$P = 1/EXP(N)$	$P * E$	$P * E$	E - E	Results added
		1	3.0038E-05	2.72173E-05	2.82076E-06	439.60 scotopic
1	0.0986	0.90609394	2.7217E-05	2.46614E-05	2.55587E-06	485.16 green
2	0.1972	0.82100623	2.4661E-05	2.23456E-05	2.31586E-06	535.44 blue
3	0.2958	0.74390877	2.2346E-05	2.02472E-05	2.09839E-06	590.93 red

### Time stamping the image for recall later.

The energies on the right-hand side of the model, i.e., 0.687 etc. total 2.801 MeV.  $P = e0*t/H$  and time  $t$  is around the circle radius. Its initial value is the time =  $1.47e-21$  sec around a cell that was originally  $r = 7.045e-14$  meters. The initial  $P = 7.2e-6$  (refer to the table above). Initial time may be birth of the organism that may live for  $1e9$  seconds. The time stamp is based on expansion of the circle with time. The expanded radius  $r_s = r_0 + 3e8 * \text{time} / \exp(60)$ . With time =  $1e9$  seconds,  $r_s = 2.63e-9$  and time around the circle  $r_s/C = 8.8e-18$  sec. The new  $P = e0t/H = 4.28e-2$  is assigned to the proton accompanying the image. The circling probability,  $P = e0*t/H$ , awaits recall with  $P = e0/E$  to form  $P/P$  for recall. This will correspond to  $E/t/H = 1$ .

		N	Energy	N	Energy	Results added
		12.432	5.076	10.432	0.687	
		15.432	101.947	17.432	753.291	
		12.432	5.076	10.432	0.687	
		13.432	13.797	15.432	101.947	
		12.432	5.076	10.432	0.687	1.00E+09 time
		13.432	13.797	15.432	101.947	2.63E-09 radius
						2.69E-01 $P = e0*t/H$
				10.140	0.511	5.50E-17 time around
				0.290	2.72E-05	7.51E-05 $E = t/H$
multiple	N	$P = 1/EXP(N)$	$P * E$	$P * E$	E - E	Results added
		1	3.0038E-05	2.72173E-05	2.82076E-06	439.60 scotopic
1	0.0986	0.90609394	2.7217E-05	2.46614E-05	2.55587E-06	485.16 green
2	0.1972	0.82100623	2.4661E-05	2.23456E-05	2.31586E-06	535.44 blue
3	0.2958	0.74390877	2.2346E-05	2.02472E-05	2.09839E-06	590.93 red
						perception of color in pixel

Like a quantum computer, many probabilities are searching for solutions at once. Images occur throughout the lifetime of the organism and search involves finding a P/P matches. This value may be controlled by the mind and may be aided by the “meaning weight” assigned. Recall occurs with the match  $P/P=1=Et/H$  occurs. The diagram below shows the matches in the information level of nature where your thoughts exist.



### Memory and thought.

The cerebral cortex consists of layers of neurons. The conventional explanation for memory is multiple synapse connections between neurons. But the data involves cells with DNA. Perhaps the network helps but is not the center of information acquisition. Consider the possibility that brain DNA protons store previous P/P meanings and their weight. Like artificial intelligence, networks of cells with proton based P/P meanings and weights become a probability surface. When new P/P perceptions occur they are compared with the trained networks for additional meaning. This is under control of the mind and allows it to build complex meanings. Cell networks containing DNA could be the center of brain function including thought. This document suggests that protons provide functions needed for fundamental life processes.

### COSMOLOGY AND TIME.

Cosmologists use an expansion model called the Lambda CDM model to predict radius vs time expansion of the universe. Everything is on the surface for each moment of time. This does not agree with our perception that things made of particles (protons, neutrons, and electrons) fill the universe and move at sub-luminal velocity.

Quantum mechanics describes small scale nature, but it is not being used for the big bang. Instead, physicists say that physics breaks down at a singularity. Some are questioning the current Lambda CDM model of cosmology. In this model expansion is stretching of space. Physicists believe that there was an early brief period of expansion called inflation. It was supposed to keep different areas uniform that are more than C away from one another. But new maps show huge voids and non-uniformities. Also, observed primordial black holes and “red spots” do not fit current theories. A paper entitled “Early black holes and dynamics of galaxy formation” [19] that explains their compatibility with straight-line cosmology [17][18][20]. The

conventional Lambda CDM model [2][3][10] involves velocities well above  $C$  for most of the model and this means it does not use the proper definition of time and space. But it produces hard to accept percentages of matter, dark matter and dark energy. In addition, it does not support James Webb observations regarding fully formed galaxies before expected. The model is based on a particle with “density” being projected outward from a center converting kinetic energy to potential energy. A value called critical density is directly related to the Hubble constant. But particles on the straight-line model are moving on space and time around the time circle. Appendix 3 shows that the critical density derivation does not apply. This explains the odd percentages of energy.

### Model of time and space.

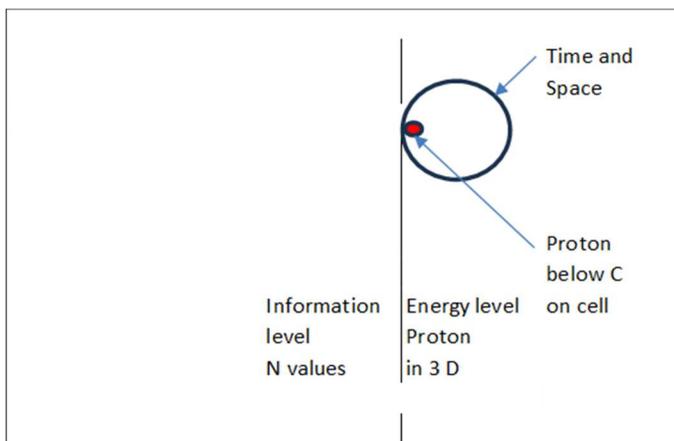


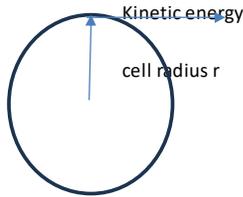
Figure 3 Definition of time and space.

Space and time are modeled as time moving at velocity  $C$  around a circle of radius  $r = hC/E = hC/2.8 = 7.045e-14$  meters. Time around the circle =  $7.045e-14 * 2 * \pi / C = 1.47e-21$  seconds [Appendix 1]. Time cycles are shorter (frequency =  $1/t$ ) when energy  $E$  is higher.  $H$  is a conversion constant (the Planck constant). From our viewing point time is circling in two directions. Schrodinger  $P=1$  and  $Et/H=1$  only occur once per cycle.

Overall, the  $N$  values of the left-hand side neutron components equal 90. Written as a probability  $p = 1/\exp(90)$ . The equal but opposite left-hand side components are also  $p = 1/\exp(90)$ . They occur at the same time, multiplying the probability to  $1/\exp(180)$ . To re-establish  $P=1$  for such an improbable particle, there must be a huge number. Specifically,  $P=1 = \text{probability of each neutron} * \text{number of neutrons} = 1/\exp(180) * \exp(180)$ . One can consider the universe being constructed of duplicates that make it whole ( $P=1$ ). Duplicated components give it space-wise and time-wise connections inside a  $P=1$  system, explaining some of the weirdness of quantum mechanics. The enormous number  $\exp(180)$  is a clue to how large-scale space and time are constructed.

Time and space consist of  $\exp(180)$  duplicates of the Figure 3 above with a neutron (that decays to a proton, electron, and anti-electron neutrino) on each circle. According to the proton model

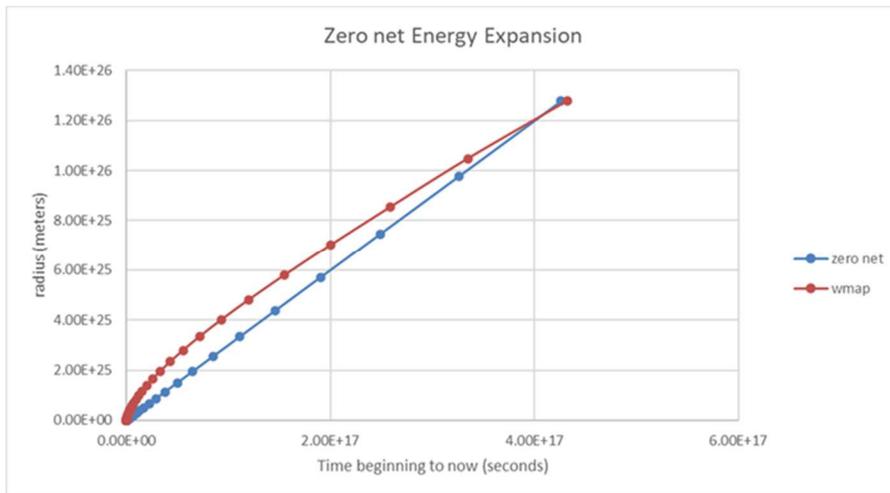
each proton has only 10.15 MeV of initial kinetic energy equivalent to an orbital velocity  $4.38 \times 10^7$  meters/sec. The velocity and temperature of the proton on the surface are reduced by expansion.



<b>Kinetic Energy MeV</b>		10.151
<b>Gamma (g)=<math>939.56/(939.56+ke)</math></b>		0.9893
<b>Velocity Ratio <math>v/C=(1-g^2)^{0.5}</math></b>		0.1459
<b>Velocity =<math>v/C \cdot C</math> (meters/sec)</b>		$4.375 \times 10^7$

### Straight-line expansion model.

In three dimensions,  $\exp(60)$  scales small  $r$  to large  $R=r \cdot \exp(60)$  meters. Each small sphere is expanding outward. Outward velocity for large  $R$  is lightspeed,  $C$  (it is also lightspeed around the circumference since time and distance are a fixed ratio). The straight-line model advances time in increments of fundamental time ( $1.47 \times 10^{-21}$  seconds). An exponential relationship is used with initial time= $1.47 \times 10^{-21} \cdot \exp(60)$  sec but is currently  $1.47 \times 10^{-21} \cdot \exp(90.8) = 4.184 \times 10^{17}$  seconds (13.27 B years). It starts with  $\exp(60)$  because initial is  $R=r \cdot \exp(60)$ . Small  $r$  expands with elapsed time  $r=r_0 + \text{elapsed time} \cdot C / \exp(60)$ . Current small  $r=1.098$  meters and large  $R=1.0984 \cdot \exp(60) = 1.25 \times 10^{25}$  meters. The current radius is determined by the Hubble constant  $2.39 \times 10^{-18}/\text{sec}$  (which is  $1/4.184 \times 10^{17}$ ).



WMAP [10] and PLANCK mission analysis was based on the Lambda CDM expansion curve shown in red above compared to the straight-line model [24][25].

The LCDM model needs to be abandoned in favor of the straight-line zero net energy model. The LCDM model is not based on the correct definition of time and space and gives the wrong percentages of mass, dark matter and dark energy. It does not give the correct Hubble constant and doesn't properly account of acceleration of the expansion rate [4][21]. The zero net energy model gives the correct cosmology parameters [24] and even gives the true cause of CMB

temperature variations [26]. James Webb observation of early galaxies are explained by early black holes predicted by the proton model and the straight-line cosmology expansion model.

## GRAVITATION.

The author derives the gravitational constant from curvature and constants from the proton model [28]. There is a deep gravitation connection between all particles in the universe. A concept called cellular cosmology breaks one large volume into many small volumes (cells) with a proton in each volume. Gravity is different because all particles influence one another (are connected to one another). Compare this to an electron and the electro-magnetic force. This force falls off quickly with distance and does not influence distant electrons like gravity influences distant mass.

The gravitational field energy, 2.801 MeV is the basis for quantum gravity with fundamental radius 7.045e-14 meters. The gravitational coupling constant  $1/\exp(90)$  scales the quantum level to Newtonian G and weakens the effect of gravity since it is shared between  $\exp(90) = 1.49e78$  particles. This causes gravitation to be a long-range force.

Gravity is an inverse squares phenomenon meaning that the force varies with  $1/\text{radius}^2$ . One proton is receiving a small gravitational flux from all the other protons in nature. The proton model contains constants that define gravity, but there is a correction for the effect all the other protons have one proton. This means the overall flux must be divided by the total number of protons. The proton-space model is based on probabilities that indicate  $M_{\text{total}} = \text{proton mass} * \exp(180)$ . Flux for one proton = total flux /  $\exp(180)$ . Since flux is  $r^2$ , the relationship is:

$$r^2 = R^2 / \exp(180)$$

$$r = R / \exp(90) \text{ radius substitution}$$

$$M = m * \exp(180) \text{ mass substitution}$$

For gravitation and large space, we consider velocity V, radius R, and central mass M as the variables (capital letters for large space and lower-case r, v, and m for quantum space) that determine the geodesic. A geodesic is the curved surface where an orbiting body obeys the Newtonian equation  $R = GM/V^2$  where G is the gravitational constant.  $G_{\text{large space}} = G$  for quantum space with mass substitution  $M = m * \exp(180)$  and radius substitution  $R = r * \exp(90)$ . Gravitational relationships define geodesics as surfaces where particles orbit.

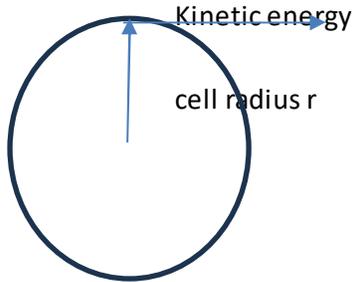
At any time during expansion		
Large space		Cellular Space
		<b>With substitutions:</b>
		<b><math>R = r * \exp(90)</math> and <math>M = m * \exp(180)</math></b>
<b><math>R * V^2 / M =</math></b>	<b><math>G = G</math></b>	<b><math>r * \exp(90) * V^2 / (m * \exp(180))</math></b>
<b><math>R * V^2 / M =</math></b>	<b><math>G = G</math></b>	<b><math>(r * v^2 / m) / \exp(90)</math></b>

**Figure 4 Origin of  $(1/\exp(90))$  for gravity.**

This is the source of  $1/\exp(90) = 4.2e-40$ . This can be called a coupling constant and compares with published value  $5.9e-39$  but physicists admit that they don't have a theory for quantum gravity. When measurements are made at the large scale, as must be done to determine G, the above

derivation indicates that we should multiply large scale values ( $RV^2/M$ ) by  $1/\exp(90)$  if we expect the same  $G$ . Geometric and mass relationships give the cell “cosmological properties”. The extremely small value  $1/\exp(90)$  is the scale value (coupling constant) for gravity. Velocity  $V=v$  for small scale and large-scale proton orbits.

The observation that gravitation is constant reveals the relationship between expansion and the real world.



$$G=RV^2/M=rv^2/M$$

$$(vM/VM)^2= (r/R)$$

$$ke/KE= r/R$$

$$ke= KE*(r/R)$$

$$KE \text{ initial}= 10.1 \text{ MeV}$$

$$R \text{ initial}= 7.045e-14 \text{ meters}$$

$$r= 10.1*7.045e-14/ke \text{ also written as } ke=10.1*7.045e-14/r.$$

Kinetic energy ( $ke$ ) and radius are related by gravitation. The cell radius decreases with time. The straight-line model specifies the radius, and the relationship above gives the kinetic energy at that radius, starting at 10.1 MeV/proton. Kinetic energy determines the temperature and other properties of the expanding universe.

### Origin of the gravitational constant $G$

The filled sphere zero net energy (straight line) expansion model was recently described by the author [12]. Previously the author documented the origin of the gravitational constant,  $G$  [28].

<b>Proton Mass (mev)</b>		938.2721
<b>Proton Mass m (kg)</b>		1.6726E-27
<b>Field Energy E (mev)</b>		2.801
<b>Kinetic Energy MeV</b>		10.151
<b>Gamma (g)=<math>939.56/(939.56+ke)</math></b>		0.9893
<b>Velocity Ratio <math>v/C=(1-g^2)^{0.5}</math></b>		0.1459
<b>Velocity =<math>v*C*C</math> (meters/sec)</b>		4.375E+07
<b>R (meters) =<math>(HC/(2\pi))/E</math></b>		7.045E-14
<b>Inertial F =<math>(m/g*V^2/R)*1/EXP(90)</math> N</b>		4.02188E-25
<b>Calculation of gravitational constant G</b>		
<b><math>G=F*R^2/(m^2)=NT \text{ m}^2/\text{kg}^2</math></b>		6.676E-11
Published by Partical Data Group (PDG)		6.674E-11

### Another calculation for G using the neutron model.

The field energy 2.801 MeV defines fundamental distance  $R = hC/E = 7.045e-14$  meters.

$F = 1/(hC) * e0^2 * 1.602e-13 / \exp(90) * \exp(2 * N)$	
$F = 2.7271e-49 * \exp(2 * N)$	
$N = \ln(2.8011 / 2.02e-5) = 11.837535$	
5.21961E-39 Newtons	
$F = 6.674e-11 * 1.67262E-27 * 2.3184E-28 / 7.0446e-14^2$	
5.21504E-39 Newtons	

The N value for the gravitational field 2.801 MeV yields the force for gravity F. This compares very favorably with the gravitational force between a neutron mass and the mass only components from the neutron model:

101.947 MeV
13.797 MeV
13.797 MeV
0.511 MeV
130.052 MeV total
2.3184E-28 Kilogram

The gravitational energy fields total  $3 * 0.687 + 0.671 = 2.801$  MEV.

The quark mass of the neutron =  $101.95 + 13.8 + 13.8 + 0.511 = 130.0$  MeV =  $2.317e-28$  Kg. [proton-space model].

Radius r de Broglie =  $hC/E = 6.58e-22 * 3e8 / 130.05 = 1.518e-15$  meters.

M neutron (mass only plus ke) =  $1.675e-27$  Kg (939.57 MeV)

Mass only =  $2.317e-28$  Kg (130.05 MeV)

$G = hC / Mm * (1 / \exp(90))$

$G = 6.58e-22 \text{ MeV-sec} * 3e8 \text{ m/sec} / (1.675e-27 \text{ Kg} * 2.317e-28 \text{ Kg}) * 1.602e-13 * (1 / \exp(90))$

$G = 6.674e-11 \text{ Nt m}^2 / \text{Kg}^2$

**This is the source of the gravitational constant at the de Broglie scale 1.518e-15 meters.**

Appendix 2 presents comparisons of the gravitational force during expansion consistent with the above derivations.

### Conclusion

The proton-space model contains an information level that codes for neutrons, protons and electrons. Nature has two levels: an information level and a correlated energy level [27]. Our mind's position is on the information side of the interface. Information creates the energy level world around us, and we are constructed of a few of nature's  $\exp(180)$  duplicated particles. Evolution is the history of optimizing organisms for survival. The information level of protons is incorporated into DNA in a way that they provide information that helps it perform its incredible task of reproducing organisms and allowing the brain to store and recall information. Reality is

information level perception of real particles around us. Examples of how nature stores and retrieves images for reproduction of the body were presented. The secret of organism reproduction is that each cell has a companion proton that pushes newly divided cells into X, Y and Z positions. The companion protons are passed down through generations. Protons control electromagnetic energy that places cells in their proper position as the daughter organism develops. Most of what the DNA needs to know when reconstructing the body is about size, shapes, color, etc. These values are coded into the information level of protons and incorporated into DNA.

Color vision is an example of cooperation between molecules that serve as sensors and a 3 D matrix of DNA protons. We found that color vision is a system that uses the probability code  $N=0.0986$  and  $P=0.906=1/\exp(0.0986)$ .  $P=0.906^n \cdot 656 \text{ nm}$  represents the four hues. This is a huge clue regarding nature. The protons form a 3 D matrix in the brain that provides a colored image for recall. DNA uses the information side of protons to time stamp images for recall through a probability matching process. Many thoughts are about images and learned language combinations associated with recall and memory.

The straight-line expansion model (also called the zero net energy expansion model) solves problems with the Lambda CDM model.

## **APPENDIX 1 PROTON-SPACE MODEL**

---

### **ENERGY DATA CORRELATION WITH INFORMATION.**

The author discovered an information pattern in the data below that allows the mass of the neutron, proton, electron, and other fundamental particles to be calculated. It led the author to assign information values called N for mass and energy components in a math model of the neutron. Sources of the data are listed.

		Particle Data	Energy Es	N details
Identifier		Group energy	Es=e0*exp(N)	
v means neutrino	N=ln(E/e0)	E (MeV)	(MeV)	e0=2.025e-5 MeV
taon v		<15.5		
electron v		2.20E-06	0.048	
N component	0.0986			ln(3)-1
N component	0.16667			.5/3
muon v		< 0.17	0.0695	
E/M Field E	0.296	2.720E-05	2.72E-05	3*.0986=.296
ELECTRON	10.136	0.51099891	0.511	10.136=10.432-3*.0986
N component for qua	10.333		0.6224	10+1/3
N component for W	10.408		0.671	90-remainder
Grav field compc	10.432		0.687	10.432=10+1/3+.0986
Grav field compc	10.507		0.740	10.408+.0986
Energy difference Neutron-Pro		1.293		0.622+0.671=1.293
Graviton	10.432 & 10.507	6.00E-26	2.801	3*0.687+.74
Up quark Mass	13.432	2.16	2.490	4*0.622 MeV
Kinetic Energy f	12.432		5.076	10.432+2
Down quark Mas	13.432	4.67	4.357	7*0.622 MeV
Down quark KE	15.432	93	92.507	101.947-9.44 (quarks)
Down Strong Fie	15.432		101.947	
Charmed Quark	17.432	1275	1273.37	15.432+2
Strange Strong f	17.432		753.291	
Bottom Quark M	19.432	4175	4175.27	17.432+2
Top Quark Mass	21.432	17276	17261.00	19.432+2
W+,w- Boson	22.106	80445	80668.71	22.5-4*.0986
Z Boson	22.234	91188	91757.6	22.5-.0985-.167
HIGGS Boson	22.530	125300	123340.7	22.5+2*.0986-.167

**Figure 5 Particle data comparisons with model N values.**

The values of N (column 2) form an easy to identify series. Column 3 is data from accepted sources and column 4 uses the relationship  $E=2.025e-5 \cdot \exp(N)$  to correlate N with the data. It supports an exponential relationship between particle or boson energy E (MeV) and  $N=\ln(E/e_0)$  where  $e_0$  is 2.025e-5 (MeV). The value  $e_0$  is derived from the mass of the electron, 0.511 MeV ( $e_0=0.511/\exp(10.1362)=2.02e-5$  MeV). The electron is  $N=10.413-0.296=10.1362$  (refer to data above). Many N values contain the fractional value  $xx.431=1/3+0.0986$ . The value  $0.0986 = \ln(3/e)$ , where e is the natural number 2.718. The symbol  $\exp(\text{power})$  is the natural number  $e^{(\text{power})}$  not to be confused with  $e_0$ , a pre-exponential.

### The Schrodinger unitary evolution

A unifying theory requires a sound fundamental concept that should represent everything [5]. Probabilities will be involved and are not difficult to understand. For anything to have meaning it must be compared to something of the same type. For example, a word in a language means something because it names something within a language you understand. Probabilities written

in numbers mean one outcome compared to all number possibilities. Shannon's definition of information is information = negative natural logarithm P, which means that if  $P=1$ , information = 0. Information is related to probability; the lower the probability (P) the higher the information content [2].

The Schrodinger unitary evolution equation with four parts, probability 1 and energy 0 will be shown below to represent one of the quarks with kinetic energy attracted to two fields.

The equality  $E t / H = 1$  implies that time moves around a circle at C and obeys Euler's equality =  $f(\theta) = \sin(\theta) + i \cos(\theta) = e^{i \theta}$  (also written  $\exp(i \theta)$ ) where the symbol i represents the imaginary number and theta is an angle around a circle with one (or two) real axis and one imaginary axis.

<https://ocw.mit.edu/courses/chemistry/5-61-physical-chemistry-fall-2007/lecture-Notes/lecture7.pdf>

Schrodinger equation:

$P = \exp(-i E t / H) * \exp(i E t / H) = 1$ . The imaginary number separates 1 into two parts, i.e.,  $-i * i = 1$

Note:  $\exp(\text{power})$  means the natural number e to a power.

Energy E and time t enter nature through the exponent,  $(i * 1)$  where  $1 = E t / H$ . Energy is E, time is t and H is Planck's constant.

Quantum mechanical equations use complex conjugates or wave functions. The result of the multiplication Probability = 1 is also referred to as "collapse of the wave function" [Topic 12.1 Argand diagram]. It computes a simple result, probability (P) = 1 and is a linear equation that can represent a system that consists of energy and time components.

Model probabilities and creation.

$P=1$  can also be written  $P = p * p * p = 1$ . Important information is in the sub-components of each  $p=1 = a * b / (c * d)$ . These values are discovered in the original data above and are used to construct a model of the neutron and proton. Probability = 1 is considered to be an initial condition from which mass (plus kinetic energy) and equal and opposite field energy were separated. Creation from net zero energy means that parts come into existence simultaneously and one doesn't have to ask; "where does energy come from?" The model describes a neutron that was duplicated a huge number of times and decays to the proton, electron, and anti-electron neutrino. Schrodinger  $P=1$  components unify nature.

### **Energy= 0 constraint**

The energy components of the neutron (model) contain net zero energy. The neutron decays to a proton, electron, and anti-electron neutrino also with net zero energy. Mass plus kinetic energy is positive, and field energy is equal and opposite.

### **Probability=1 constraint**

Evaluating energy requires consideration of overall probability, not just the probability of particles. The initial probability of the universe is 1, meaning it does indeed exist. Initially there was the potential for many neutrons, each with mass, etc., that would make up the universe. Specifically:

$P = 1 = \text{probability of each neutron} * \text{number of neutrons} = 1/\exp(N) * \exp(N).$

### Neutron and proton energy components

Development of the model is based on the Schrodinger term  $E\hbar = 1$ . The math below is like Dirac's analysis. It allows the energy terms and time terms to be separated.

#### Constrain Energy to zero

$$1 = \exp(itE/\hbar) * \exp(-itE/\hbar)$$

take the natural log and divide both sides by  $i$

$$0 = itE/\hbar - itE/\hbar$$

$$0 = t/\hbar * E - t/\hbar * E$$

take the square root. Since  $E\hbar = 1$ ,  $E = 1/(t/\hbar)$

$$0 = (E - E) * (t/\hbar - t/\hbar)$$

$$0 = E1 - E1$$

Example:

$$a = 1/b$$

$$a = .5$$

$$b = 2$$

$$ab - ba$$

$$0$$

$$(a-a)*(b-b) = 0 \quad (0.5-0.5)*(2-2) = 0$$

Using the square root procedure above with each  $t/\hbar = 1/E$ , we only need the energy terms that are equal and opposite. (The square root also has a  $(t/\hbar - t/\hbar) = 0$  solution that contains inverted terms, but the solution is redundant).

Definitions:

$p = e0/E = 1/\exp(N)$  and  $p = 1/\exp(N)$ . Combining these definitions yields  $E = e0 * \exp(N)$ . The value of  $N$  is discovered in the original energy data. The pre-exponential constant  $e0$  is evaluated by knowing the electron is  $N = 10.413 - .296 = 10.1362$ .  $e0 = 0.511 / \exp(10.136) = 2.02e-5$  MeV.

Mass plus kinetic energy will be defined as positive separated from equal and opposite negative field energy.

$P = p * p * p * p$  represents an information pattern we recognize as neutron energy components. Each component has a specific probability that is related to its energy,  $E$ .

The proton model is the source of information for cosmology and unification. It is the basis of the expansion table above and shows the origin of kinetic energy for expansion 10.15 MeV. Every component of the proton has an information value associated with it. In the table below, the information value is placed next to an energy value. The relationship is  $E = e0 * \exp(N)$ .  $N$  is information.

The model below describes a neutron that was duplicated a vast number of times and decays to the proton, electron, and anti-electron neutrino. It starts with  $N$  for the Higgs,  $Z$  and  $W$  bosons on the left-hand side which, according to the Standard Model, are the source of field energy on the right-hand side.

				21.432		Top							
	Higgs			19.432		Bottom							
	Higgs			17.432		Charm							
	Z=22.235	Z components	Neutron		Neutron			Proton					
Split 90/4	W=22.106	W componer	Action of W-	N values for mass	E=e0*exp(N)	N values for fields	E=e0*exp(N)	N values for mass	E=e0*exp(N)	N values for fields	E=e0*exp(N)		
	22.500	22.530		12.432	5.076	10.432	0.687	12.432	5.076	10.432	0.687		
		-0.1972	0.197	15.432	101.947	17.432	753.291	15.432	101.947	17.432	753.291		
		0.167	5.167	down -.33				down -.33					
	22.500	22.530		12.432	5.076	10.432	0.687	12.432	5.076	10.432	0.687		
		-0.1972	0.197	13.432	13.797	15.432	101.947	13.432	13.797	15.432	101.947		
		0.167	3.167	up -.33 plus 1 op				up -.33 plus 1					
	22.500	22.235	-10.4316	12.432	5.076	10.432	0.687	12.432	5.076	10.432	0.687		
		0.0986	10.507	13.432	13.797	15.432	101.947	13.432	13.797	15.432	101.947		
		0.167	10.333	up -.33				up -.33 plus 1					
	22.500	22.106	-10.4316	Z components	E=e0*exp(N)	Z Field	E=e0*exp(N)	W components	E=e0*exp(N)	W field	E=e0*exp(N)		
		0.3944	10.408	-10.432		-10.432		-10.432		-10.333			
			10.432	10.507	0.740	10.507	-0.740	10.408	0.671	10.408	-0.671		
			12.092	10.333	0.622	10.333	-0.622	10.136	0.511	10.333	-0.622		
							0.000	0.296	2.72E-05				
	90.000	90.00	22.50	90.000		90.000		90.0000		90.000			

The proton model is based on zero net energy. Mass plus kinetic energy offsets field energy.

	MeV			MeV	
	E=e0*exp(N)			E=e0*exp(N)	
N1=12.43	5.076	E1 ke	N3=10.43	0.687	E3 field
N2=15.43	101.947	E2 mass	N4=17.43	753.291	E4 field
	E3+E4-E3-E4=646.96				
	E2 mass	E1 ke	E3 field	E4 field	
	MeV	MeV	MeV	MeV	MeV
	101.95	646.96	5.08	753.29	0.69
	E2+Difference KE+E1		753.98	E3+E4	753.98
	Energy is conserved since 753.98=753.98				

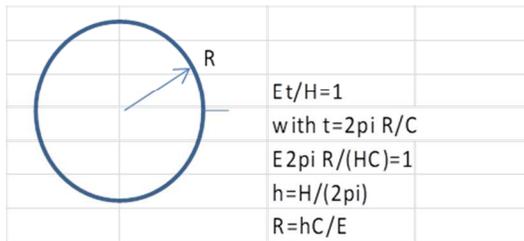
The neutron decays to a proton, electron, and anti-electron neutrino. The components above add exactly to the mass of each of these particles below. It is a particle-space model because it includes energy for expansion.

		MeV		MeV		MeV		MeV
		Neutron Mass Components		Neutron Field Components		Proton Mass Components		Proton Fields
		101.947	Mass	753.291	Strong Field E	101.947	Mass	753.291
		13.797	Mass	101.947	Strong Field E	13.797	Mass	101.947
		13.797	Mass	101.947	Strong Field E	13.797	Mass	101.947
		5.076	Ke	2.801	Gravitational Field	5.076	Ke	2.801
		646.955	Difference KE			646.955	Difference KE	
		83.761	Difference KE			83.761	Difference KE	
		83.761	Difference KE			83.761	Difference KE	
		10.151	Fusion KE			10.151	Fusion KE	
		-20.303	Weak Field E			-20.303	Weak Field E	
						-0.622	minus quark mass	
	accuracy vs PDG	0.622	adds to quark mass		accuracy vs PDG	-0.048	ae neutrino	
		-7.18546E-09		-0.118		-0.0000096	Em Field +2	-0.118
		939.5654133	939.565413	Neutron mass		938.2720814	938.27209	
	PDG				PDG	2.72E-05	EM Field -1	
						0.511	Electron	
						0.671	622+.048	
						0.11141	Kinetic E	
		10.15127081	KE Expansion			10.15	KE Expansion	
		10.15127081	PE Expansion			10.151	PE Expansion	
		959.8680		959.8680		959.8679		959.8680

Overall, the N values of the left-hand side neutron components equal 90. Written as a probability  $p = 1/\exp(90)$ . The equal but opposite left-hand side components are also  $p = 1/\exp(90)$ . They occur at the same time, multiplying the probability to  $1/\exp(180)$ . To re-establish  $P=1$  for such an improbable particle, there must be a huge number. Specifically,  $P = 1 = \text{probability of each neutron} \times \text{number of neutrons} = 1/\exp(180) \times \exp(180)$ . Referring to the concept of wholeness, one can consider the universe being constructed of duplicates. The duplicate proton-space components give it space-wise and time-wise connections inside a  $P=1$  system, explaining some of the weirdness of quantum mechanics.

### Appendix 2 Gravity and the straight-line expansion model.

It is known that  $E = h \cdot \nu$ , which can be written  $E t / H = 1$  with frequency  $\nu = 1/t$  and  $h = H / (2\pi) = \text{Planck's reduced constant [Wiki]}$ . With  $t = 2\pi r / C$ , to  $r = HC / (2\pi) / E = hC / E$ . The probabilistic position of the quantum particle is  $r$ .  $H = \text{Planck's constant} = 4.14e-21 \text{ MeV-second}$ .

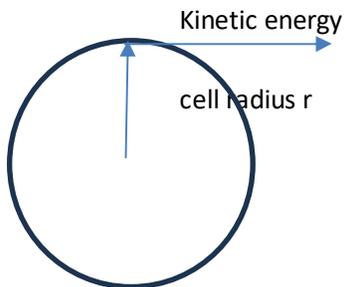


**Figure 1 Derivation of equation  $r = hC/E$**

The particle-space model (topic 5) indicates that there are  $\exp(180)$  cells that exactly fill the large volume associated with the expanding sphere. The initial radius of the universe is the value  $8.04e12$  meters. The calculations below show the volume and radius of each cell:

Initial radius (meter)	8.04E+12
$Vol = 4/3 \cdot \pi \cdot 8.04e12^3$	2.18E+39
number of cells $\exp(180)$	1.48938E+78
vol/cell (meter <sup>3</sup> )	1.46E-39
radius of cell (meter)	7.0446E-14

Expansion of the universe can also be calculated with relationships for expansion of each cell. Cells become larger according to the following model:



The proton orbits the circumference the outward inertial force is exactly equal to the inward gravitation force. These fundamentals coupled with information from the proton model allow a calculation for the Newtonian gravitational constant, G.

Note: Some of the forces above involve probability values related to  $\exp(180)$ . Background for this derivation of the gravitational constant is presented in several documents.

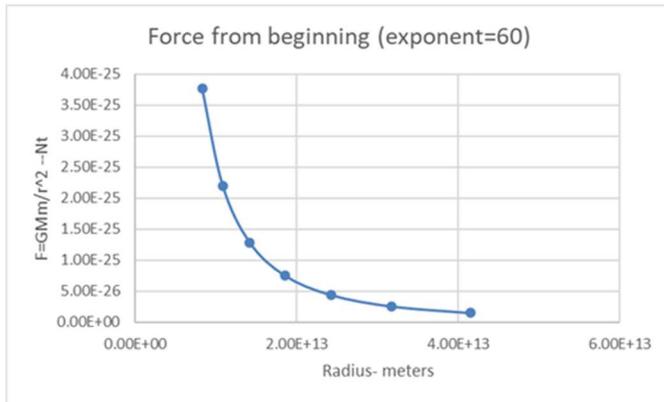
<b>Unification Table</b>	<b>cell bj162</b>	beginning Mass+Ke	beginning Field Energy
exponent			60
<b>Field Energy E (MeV)</b>	$E=2.801/\text{EXP}(\text{exponent})$		<b>2.5E-26</b>
<b>R (meters)</b>	$R=hC/E=1.97e-13/E$		<b>8.04E+12</b>
<b>Particle Mass (MeV)</b>	$m=1.67e-27 \text{ KG}$	939.57	957.18
<b>Mass M (kg)</b>	1.6726E-27		
<b>Kinetic Energy (MeV)</b>	$KE=7.045e-14*10.138/R$	10.123	
		0.03	-1.18E-01
conserved $E=PE+KE$		10.15	2.8011
Sum of above		959.87	959.87
<b>Required energy in column (MeV)</b>		<b>959.8680</b>	<b>959.8680</b>
<b>time</b>	<b>2pi R/C (sec)</b>		<b>1.69E+05</b>
Time across radius=time/(2 pi) seconds			2.68E+04
<b>E*t (MeV-sec)</b>	<b>Field E*time</b>		<b>4.14E-21</b>
<b>E*t/H</b>	<b>E*t/H</b>		<b>1.00E+00</b>
<b>Universe mass=1.6747e-27*exp(60)</b>		2.4943E+51	
R cell=8.04e12/exp(60)		7.0446E-14	
$V=(2*10.123/1.67493E-27*1.6022e-13)^{0.5}$		4.401E+07	
$F=6.6749e-11*(M*1.6749e-27)/R^2$		<b>4.0320E-25</b>	
$F=6.6749e-11*(1.6749e-27*2.4946e51)/8.04e12^2$		<b>4.0320E-25</b>	
$F=2*10.123/7.045e-14*1.6022e-13/\text{exp}(60)$		4.0320E-25	
<b>Inertial F=m*V^2/R</b>	Nt	<b>4.0320E-25</b>	
$F=2*10.123/8.04e12*1.6022e-13$		4.0320E-25	
$G=Fr^2/m^2/\text{exp}(30)$		6.6742E-11	

The gravitational constant is calculated from the curvature of the universe at  $7.0446e-14*\exp(60)=8.04e12$  meters. The table above shows several calculations for the inward gravitational force  $F=4.032e-25$  Newtons on the neutron in cell. The outward inertial force on the cell is also shown  $F=mV^2/R$ . The kinetic energy per cell below matches the forces in the proton-space table. For comparison, its value based on force is:

$$\mathbf{Ke=4.032e-25*7.0446e-14/1.6022e-13*EXP(60)/2= 10.123 \text{ MeV}}$$

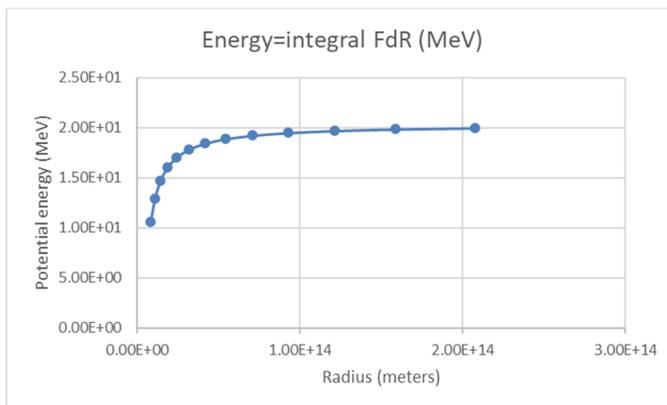
And the velocity that produces the force =  $4.401e7$  meters/second. This is a velocity lower than light-speed C.

Expansion is resisted by gravitation. This requires converting kinetic energy to potential energy. In the table below time has advanced from  $\exp(60)*1.47e-21=1.69e5/(2\pi)=2.68e4$  seconds. to  $\exp(90.372)*1.47e-21/(2*\pi)=4.16e17$  seconds. This is the current radius and time for the expansion model. The energy expended to resist gravity is shown below:



With this force, the integral of force\*delta r produces the increase in potential energy as the universe expands. From the proton model, KE+ PE= 20.3 MeV/neutron. At the beginning condition the PE is 10.15 MeV but integral F\*delta r for each neutron increases potential energy and kinetic energy decreases. This is shown in the graph below for the first few increments of the zero net energy expansion model.

The increases in potential energy quickly approaches 20.3 MeV as kinetic energy decreases.



Starting with  $G = G$ , kinetic energy ratios throughout expansion will be proportional to the radius ratio. Small  $r$  is the radius a proton orbiting on the cell surface.

$$G = RV^2/M = rv^2/M$$

$$(vM/vM)^2 = (r/R)$$

$$ke/KE = r/R$$

$$ke = KE * (r/R)$$

$$KE \text{ initial} = 10.123 \text{ MeV}$$

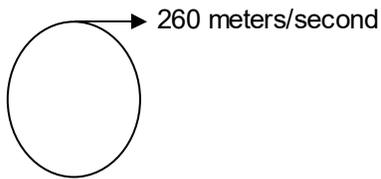
$$R \text{ initial} = 7.045e-14 \text{ meters}$$

$$r = 10.123 * 7.045e-14 / ke \text{ also written as } ke = 10.123 * 7.045e-14 / r.$$

### Appendix 3 An alternative to the Lambda CDM expansion model

When NASA sent payloads to the moon the rocket pointed up and around the earth into an orbit. Consider the possibility that nature uses a particle with decreasing tangential kinetic energy (cells) to increase the size of the universe. This does not mean that the outside of the universe is rotating, instead it means that many expanding cells expand the universe. This provides an alternate way of exchanging kinetic energy for potential energy. Nature uses tangential velocity as the basis of an expansion. Expansion is caused by pressure. The pressure inside a cell is equivalent to the inertial force of the tangential velocity divided by surface area of the sphere.

The orbit has 260 meters per second of tangential velocity associated with CMB temperature 2.73K at the end of expansion. The radius of the cell (a proton orbiting the space it encloses) is 1.2 meters and  $\exp(60) \cdot 1.2 = 1.3e26$  meters.

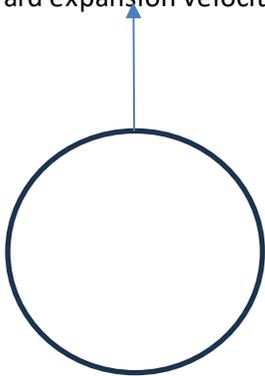


The Lambda CDM model uses the following derivation for critical density [2]:

$KE = 1/2 \cdot M \cdot V^2 = PE = F \cdot R = (G \cdot M^2 / R^2) \cdot R$			
$V^2 / R^2 = 2 \cdot G \cdot M / R^3$			
$(V/R)^2 = 2 \cdot G \cdot M / R^3 \cdot (4/3 \cdot \pi) / (4/3 \cdot \pi) = 8/3 \cdot \pi \cdot G \cdot \rho$ where $\rho = M / (4/3 \cdot \pi \cdot R^3)$			
$\rho = (V/R)^2 / (8/3 \cdot \pi \cdot 6.67e-11)$			
$\rho = (V/R)^2 / (8/3 \cdot \pi \cdot 6.67e-11 \text{ Nt m}^2/\text{kg}^2)$			

But this derivation is for outward expansion velocity (like throwing a stone into the air) rather than enlarging an orbit with decreasing tangential velocity.

Outward expansion velocity



$$KE = 1/2 M (R/T)^2 = G M^2 / R^2 \text{ (integral dR expansion).}$$

The kinetic energy of the cell is  $1/2 M V^2$  with  $V = R/T$  but in the tangential model, velocity is around the cell perimeter. It is only remotely related to integral dR where R is the radial expansion of the universe. The R's cannot be combined. The concept of critical density is incorrect for tangential based expansion.

In addition, when the R's are combined, radius does not increase with  $(\text{time}/\text{time}')^{2/3}$ . This is clearly shown below:

$(R/T)^2/R^2=2 GM/R^3$  reduces to  $R^3= GM*T^2$ . With GM a constant:

$$R/R=(T/T)^{(2/3)}.$$

But  $R'/R= (\text{Time}/\text{Time}')^{2/3}$  (the basis of the Lambda CDM expansion model) is incorrect because the R's cannot be combined in this way as discussed above.

Previous documentation is based on a universe created from zero net energy and probability=1 in the beginning [17]. This is an "ex nihilo" beginning. Its creation story is that intelligent information operations separated energy into two equal and opposite parts that together are zero net energy (ZNE). The author has been publishing an information based model of the neutron and proton [12][17][18][19] based on the best data available from NIST and the Particle Data Group.

## References

1. Sharpe L. T., Stockman, A., Jägle, H., & Nathans, J. (1999). *Opsin genes, cone photo pigments, color vision, and colorblindness*. In K. Gegenfurtner & L. T. Sharpe (Eds.), *Color vision: from genes to perception* (pp. 3-50) Cambridge: Cambridge University Press.
2. Shannon, Claude. *A mathematical Theory of Communication*, 1948.
3. Barbee, Gene H., *Information and Reality*, viXra:1602.0219v1, January 2016.
4. Barbee, Gene H., *Nature and Information*, <http://www.vixra.org/pdf/1611.0302v1.pdf>, December 2016. <http://prespacetime.com/index.php/pst/issue/view/91>
5. Barbee, Gene H., *Creation and Schrodinger's Equation*, viXra:1811.0334v1, January 2018
6. Barbee, Gene H., *Life Processes within the Mind of Creation*, Scientific GOD Journal, December 2019, Volume 10, Issue 8.
7. Barbee, Gene H., *Mind in Mind*, Academia.edu.
8. Barbee, Gene H., *Storage and Computation for life processes*, Academia.edu, October 2020.
9. [Barbee, Gene H](#) *How Nature Computes Reconciliation with Standard model* May 16 2019, [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi249Ka4YPwAhULqJ4KHdCbD30QFjACegQIBRAD&url=https%3A%2F%2Fwww.academia.edu%2F38563434%2FHow\\_Nature\\_Computes&usg=AOvVaw1R79pck16w7911fDxy1\\_G0](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi249Ka4YPwAhULqJ4KHdCbD30QFjACegQIBRAD&url=https%3A%2F%2Fwww.academia.edu%2F38563434%2FHow_Nature_Computes&usg=AOvVaw1R79pck16w7911fDxy1_G0)
10. Wilczek, Frank, *A Beautiful Question*, Amazon books.
11. Barbee, Gene H., *Nature's underlying information system*, Academia.edu, April 2023.

12. Barbee, Gene H., [\(99+\) Zero net energy cosmology](#), Academia.edu.
13. Barbee, Gene H., **A Unified Theory Revised 2024**, Academia.edu., May 2024.
14. Subhajit Waugh, Unified Physics and Cosmology: Theory of Everything, Academia.edu.
15. Blank.
16. Levin, Michael, various U Tube Videos circa April 2023.
17. Barbee, Gene H., [\(99+\) A Simple cosmology model](#), Academia.edu.
18. Barbee, Gene H., [\(99+\) Mass accumulation in straight-line cosmology](#), February 2025.
19. Barbee, Gene H., [\(99+\) Early black holes and dynamics of galaxy formation](#), June 2025.
20. Barbee, Gene H., [\(99+\) The origin of the cosmic web and reinterpretation of CMB](#), June 2025.
21. Barbee, Gene H. [\(99+\) How the brain creates three-dimensional reality | Gene H Barbee - Academia.edu](#) , February 2024.
22. Blank.
23. Barbee, Gene H., *Color Vision*, <http://www.vixra.org/pdf/1311.0124v1> .
24. Klingman, Edwin E, *The Atheist and the God Particle*, August 2008, Amazon.
25. Search “MIT22 Evolution of Function Chap 6”.
26. Barbee, Gene H., [\(99+\) Exploration of mind in Mind](#), Academia.edu., July 2025
27. Barbee, Gene H., [\(99+\) A view from within mind in Mind](#), Academia.edu., July 2025
28. Barbee, Gene H., [Discovery of Quantum Gravity, viXra.org e-Print archive, viXra:1508.0120](#), September 2019.

### **Electron quantum shifts.**

Protons are also involved in visual images that form the basis for image storage and recall. Recalling that the quantum number for the orbit reduces the kinetic energy in the orbit by  $1.36e-5/Q^2$ , where Q is a quantum number [Wiki]. The quantum number for the orbit reduces the kinetic energy in the orbit by  $1.36e-5/Q^2 = 3.4e-6 - 1.51e-6 = 1.89e-6$  MeV, where Q is 2 and 3. The eye's response to colors does not follow the electromagnetic orbitals beyond Q=2 or 3. It will be shown that an important wavelength (656 nanometers) is further changed by probability  $(.906^n * 656)$ , lowering the energy and increasing the wavelength. For our visual system, the probability  $0.906 = 1/\exp(0.0986)$  and n increases from 1 to 4. The body uses molecules as sensors to send signals to the brain for processing by DNA protons. Neural networks in the brain use these signals to perceive vision.

Nature is perceived through remembered probabilities that search and find matches of  $P/P=1$ . Probabilities continuously circle with time with  $P=e^{0*t}/H=1/\exp(N)$ . Time is always circling. Example from above  $P=7.18e-6=1/\exp(11.84)$ .  $N=11.84$  is recognized as  $\ln(2.801/2.02e-5)$  where  $r=hC/2.801$  and  $t=1.47e-21$  sec. Memory  $P=1/\exp(11.84)$  is circling with time. This is the way that nature remembers probabilities.