

## Phi Physics

### Towards a Unified Philosophy of Nature

"My design is first to examine facts, and afterward to demonstrate how bodies are constrained to act. It is the method that one must adhere to in all research into nature." Leonardo da Vinci

### THE MYSTERY OF KNOWLEDGE

The variety of form and energy, which surrounds us is truly amazing. The air with its many aspects of weather, the beauty of light in infinite combinations, also ideas, perspectives, and experiences, all participate with us in life.

The arena of nature is vast and encompassing. The knowledge people gain from digesting the many experiences, perceptions and facts of nature is ephemeral at best but is summed up in the term "common sense." Knowledge changes with new facts and experience, however, some theories about the laws of nature are so closely woven into the fabric of experience that they express the dynamics or structure of natural law in an essential way which can be validated in many ways.

Specialized knowledge is certainly necessary for a penetrating study of natural laws. Specialized knowledge can become more applicable than general knowledge, reflecting the subtle in the properties of natural effects. A good example of specialized knowledge becoming so highly resolved that it divides into new sciences, is chemistry with its branches each becoming an avenue of research, Biochemistry, Electrochemistry, Organic Chemistry, Nuclear Chemistry etc..

While knowledge gets deeper, a just and frequent synthesizing and regrouping of basic philosophy will keep knowledge from not being communicated to the generations living in the transformations which produced it.

New knowledge is a powerful tool and an energizing, inspiring force especially to the young open mind. The thought that somehow the facts of nature make it into the classrooms by force of being facts is erroneous.

Science does not always worry about educating the public, only the specialists entering their domain get the higher teachings.

Lack of clarity in what science is and does, permeates the media in all forms. Work must be put into bringing interest and curiosity into the information about nature as it is unfolding before us.

The twentieth century has seen a magnificent increase in knowledge about the world. At the same time there has been a slower rise in the clear presentation of knowledge about nature to the average person. The education of modern man and woman has become specialized and is likely to be extensive and largely in a new language of its own, but this does not give a coherent synopsis of natural law in a digestible form. A generic natural philosophy course, which is ongoing in all schools is essential.

Interdisciplinary studies in the philosophy of nature, covering the natural sciences and the implications of modern research and discoveries should be available to anyone.

Education is more than just this kind of study admittedly, but presently there is a dire lack of Lovers of Wisdom (Philosophers) amongst the population of scientists.

Educational standards in all areas and the teaching of information in a clear and INTERESTING way are related. The greatest benefit derived by the receiver of schooling is within the interest generated. If a teacher can only pass on something, perhaps new knowledge of higher ideas, perhaps just an inspiring moment or two where the inner questioning occurs and flashes of insight are displayed on a young persons face.

The study of Natural Philosophy should be reintroduced as the basis and perspective from which the three Rs and such rudiments can be grasped with ease. What is taught is important but so also is the way teaching occurs, especially teaching about nature.

Great ideas are normally found within special minds. The sharing of these ideas and the learning of them can be facilitated with the right models of the natural world. Scientists use new and interesting models to regroup knowledge, to see new perspectives or new fundamentals, education should do the same thing. The method of grouping information from the natural sciences so that it can be presented clearly is the thing to concentrate on.

Inspiration and insight are not forgotten if we focus on the WAY.

## ***THE THREE SPECTRUMS IN NATURE***

The three basic observable and well-known spectrums within nature, which ensoul nature and vivify all that is, are the greatest mystery in life, although in the last part of the 20<sup>th</sup> century we are beginning to learn.

### **ELECTRICITY, ELECTROMAGNETIC**

RADIATION (light) and SOUND (or physical vibration) represent three different modes of vibration to which so called "matter" is subject. Somehow life enters here where the apparently tangible (gravitating mass) meets the invisible, intangible (three spectrums in nature).

Electrical phenomena are what we see around us everywhere. We know that electrons, whatever they are, are responsible for the production of the light from the things, which emit light. Light bulbs, fire, chemical means of light generation etc. all rely on the properties of electrons to absorb and emit so called "photons".

Electrons do their thing jumping about in their dance of light and the rest of the universe barely knows about that hidden nucleus within. The center within the atom, the nucleus is closely allied numerically with the electrons inhabiting another domain in their orbiting and chemical peregrinations.

The numbers of e<sup>-</sup> and p<sup>+</sup> particles is equal in a neutral atom. Add another e and p and you get the next chemical element. Neutrons are variable per atom and with the light atoms are fewer than the protons while with the heavy atoms there are generally

more neutrons than protons. As the proton is approached the electrons there are in a denser electric field and this field has many interesting aspects.

Magnetic and electric forces seem to diverge here where the protons and neutrons meet space itself. They are embedded in it deeper than the electron.

So there does seem to be an upper limit to plain and simple EM photon activity based on electrons. But do not be fooled. Even great physicists have come up with ideas as strange as one single electron forming the entire universe by going back and forth in time (John Wheeler).

There is actually plenty of room to explore these ideas and more. Many ideas fit certain facts and can evolve into a theory, which explains the principles behind certain facts. Everyone has plenty of theories going on helping them run their day to day activities. Few know exactly how a TV works but know that certain functions exist and know how to use them.

It is certainly invention more than theory, which determines these things. But occasionally a theory like the theory of the photoelectric effect (Albert Einstein) has a great many spin offs which merge nicely with invention and the march of astounding possibilities for the people of Earth goes on.

Theories, which make new things possible for the future are the best. This can only be if they are somewhat correct in their approach. Theories that are proven false may reveal the truth about some facet of nature in the process, so they too have merit. We can find the progression from superstition to opinion to hypothesis to theory. Actually, most so called theories are opinion or hypothesis. Theories have evolved a little beyond this to portray the facts as they are observed in the best ways possible. If they have a pattern which reveals something of a principle of nature, a law, which shows hitherto unknown relations which could be observed somehow then they can predict. The final form of knowledge as it blossoms into understanding is a kind of future seeing ability, the ability to predict the course of things. Therefore a good theory should predict something.

### **COSMIC ENERGY**

If the frequency is high enough and we look closely (with instruments) there seems to be no way to distinguish between pieces of matter flying around and EM photons. Above the threshold frequency for electron pair production the photons are part of the time particles and part of the time EM waves. This makes it difficult to know what cosmic rays are made of. Are they atoms of different elements, particles and what not, or are they photons with a punch. Sometimes thousands or millions of particles like electrons, protons and neutrons are created from the impact energy of a single cosmic ray. What was it that hit? Hard to say. Whatever it was it was going very, very fast, in fact they seem to be going at the speed of photons which is the SPEED OF LIGHT. All this leads to the fact that there is a limit to our ability to sort out the organization of the vast cosmic ray scheme of the universe at the high end of the EM Spectrum.

An atom exhibits the three spectrums thus;

Kinetic energy in the form of physical vibration

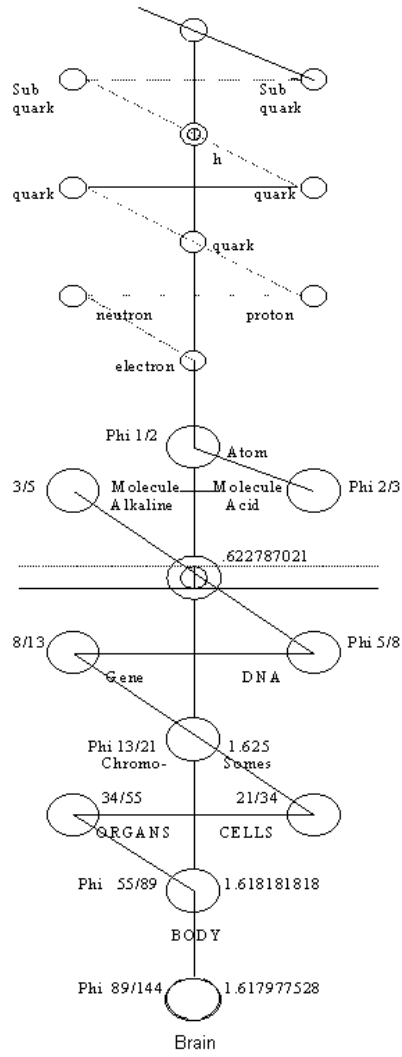
Electromagnetic energy frequencies depending on the "state" of the atom

Electrical frequencies associated with the motion of the currents of electricity, i.e. electrons.

**FROM WHICH WE STEM** Space-Time-Energy-Matter:

A Theory of Dimensions and Geometry.

### Phi Tree of Life



Yetzira h

ASSIAH

The inherent triplicity of nature manifests throughout all spectrum areas. At the root point is a triangle with its hypotenuse equal to Plancks Length. This can be calculated to precision in Spiral Energy Transformation theory.

Each Dimension is displaced in the greater universe by a velocity factor of the speed of light  $c$ .  $c$  is a universal fundamental constant.

Each Dimension is structured by number in the form of ratios, which approximate the perfect Golden Section Ratio (PHI). Phi-Golden is a universal and fundamental constant. Basically, a revealing study of dimensions and light reveals the ATOM in its inmost structure and origins, as well as the nature of forms arising within the domain of other dimensions.

The Pi relation of Diameter to Circumference is displayed in the universe in all dimensions and is a universal and fundamental constant.

### **MODIFIED PLANCK THEORY**

The Quantum of Action  $1/2h$  is a complex constant composed of the phi relation, the pi relation and the speed of light relation which all exist in perfect accord in energy exchanges. The constant related to Plancks Constant which reveals the true structure of matter/energy is derived from the Phi relation at the heart of Plancks Constant and is equal to  $c$  (squared) x the square root of  $1/2h$ . This then as a phi ratio is the true Planck Constant.

This is PhiX and this number is extremely important in the universal generation of fundamental properties of the atom.

From it in combination with  $2\pi$  and powers of the speed of light, can be formed the important fundamental constants, (by a simple progression).

### **PHI PHYSICS**

The Relation of the Golden Ratio to Quantum Physics: Phi Physics.

The Golden Section Ratio is a perfect mean number having the property of rotation inherent within its perfect value.

1.618033988... inverted becomes 0.618033988...[PhiG-1=1/PhiG].

Another number, which displays this perfection in a similar way is the number 1. Inverted it remains one. However, when utilized as 10 one can see the deep symmetry in its inversion to  $1/10$  or  $0.1=1/10$ . The digits remain the same as in the phi relation. A deeper relation still can be seen in the value of the root of 10.

The square root of one is one but the square root of 10 is a number with very similar properties to PhiG.  $\sqrt{10}=3.16227766$  and the inverse of this number is the same number divided by 10.  $1/3.16227766 = .316227766$ , all the digits are the same but place value is displaced. It is the property of these numbers and their inverse, which gives manifestation its opportunity to occur. This is why the base 10 system works so well and is quite natural to use. From this point of view where the flux of the universe becomes manifest by means of number in certain perfect, harmonious and symmetrical forms. The flux state has a direct relation to the Phi ratios created by

perfect numbers. This is true mathematically and philosophically. The manifested state has a direct relation to the powers of 10 and the properties of its square root.

Flux and mass [Phi and 10] are related together by motion at the velocity of light and powers of that velocity.

Flux and mass in relation and manifestation through number generate lengths of flux lines.

**Qabalistic** text excerpts from "The Fountain of Wisdom." With commentary in parentheses showing relation to Phi Physics.

The first attribute, long and true and straight..(the first principle is the first dimension, a representation of an infinite line) Each attribute is called a flame..(these attributes are connected with light, heat etc. from the electromagnetic spectrum)

Each flame or line is also an eye.. (an eye receives light)

Each eye or line divides into 5 matters.. (compare with Luke 12:51,52, "Suppose ye that I am come to give peace on earth? I tell you, Nay; but rather DIVISION: For from henceforth there shall be FIVE in ONE house DIVIDED, THREE AGAINST TWO, AND TWO AGAINST THREE.) From the flame the ether springs forth, and the ether informs STRUCTURE.. (the infinite lines of the one are the root of the ether which is here taken as two dimensional field, and this is the foundation for three dimensional geometric structures) also ether informs ACTION, RESTORATION, MECHANICS, CALCULATION, UTTERANCE, AND GROUPING: These together are the essentials of all being. (Seven in number)

The holy one is the first existent.. it is incumbent for us to understand and contemplate an examination of His reality, and how He began creation.. In which path did He emanate..Did they divide into parts or extended entities.. channels are narrow and short, paths are excessive, roads are wide, also called children, mothers and androgenous.. From the flames the thread extends outward.. the threads thicken, grow stronger to become scepters.. Everything dissolves and returns to the ether which is the essential element..

Before the celestial world, known as the 377 compartments, there was an ether, an essence from which sprang a primordial light refined from myriads of luminaries; called the Holy Spirit..

(377 is the 13<sup>th</sup> Fibonacci number counting from 1. The number of the Heavens 377 is the number SHaMaYiM = 390 minus the 13 attributes, thus connecting 13 with 377. 13 is the 6<sup>th</sup> Fibonacci number itself).

After the first light, another fountain was drawn out from which flows darkness. This darkness is a combination of three hues.

1<sup>st</sup>. green, 2<sup>nd</sup>. green and light blue, 3<sup>rd</sup>. green, light blue and red.. And this is the primeval darkness which springs out of the ether. (this is very clear; first the middle of the solar spectrum is considered, then the portion towards the Ultraviolet or the blue end of the spectrum, then the red towards Infrared. Green, Blue and Red are indeed

the three primaries of color called variously the additive primaries, the light primaries, the physicists primaries and also the physiological primaries. Pigment primaries or subtractive primaries are Red, Yellow and Blue. The point that the text then makes is that these light hues cannot be seen directly by any means, which is correct for only the absorbing of light can detect it, we see reflected and partially absorbed light producing color around us, not the etheric light itself which cannot be known). Therefore God said, "You shall see My back, but My face shall not be seen." "But from that point you may know all." Moses began to observe the primeval light, the root of all.. composed of two entities, from two sources, one light and one darkness.. This flow extends and gushes forth by way of channels, and the flow again becomes weak like a stream, and the stream again becomes minute, turning into a thread.. till it becomes tiny droplets.. these join, mingle, expand and a sap pours forth from them.. The colors are akin to a flame extending from ether.. The two flows are really one matter coming from the primeval darkness, alluding form. When this form is altered, it paints itself through its courses and the hues of its colors into ten, and each separate hue contains the number ten, arriving at a total of one hundred. The hundred returns again and again into utterance, calculation, and the grouping of entities.. until they return to the sum of one, and one is the essence.. (this is explicit about 10 and 10 squared being significant at the level of the first manifestations of form, i.e. at the root of dimensional geometry).

The thirteen attributes can be related to the Fibonacci series of numbers directly, 1 2 3 5 8 13 etc. and also can be related to the series of ratios formed from them approximating phi.  $1/1$   $2/1$   $3/2$   $5/3$   $8/5$   $13/8$   $21/13$   $34/21$   $55/34$   $89/55$   $144/89$   $233/144$   $377/233$   $610/377$ . These numbers are encoded into all of nature. It should be no wonder that they are at the root of quantum events as well in the heart of the atom, setting up the rules that the formation of geometric entities follow, in contrast to what modern quantum physics portrays, which is non geometrically based.

Einstein always believed in the geometry of the microworld and he was right. From the one does all of the geometry of phi come.

### **THE ENDS JUSTIFY THE MEANS:**

From Infinity a one dimensional line has, through the Phi relation become a length having two extremes. Any length will have two extreme points and therefore will also have mean points between these extremes. Three of these mean points are significant and are naturally generated by the flow of number. These three are the ARITHMETIC, GEOMETRIC and HARMONIC means.

From these principles a model of the ATOM can be derived which is based on the same principles of number that life forms vividly show.

### **NUMBERS AND MUSIC**

A modern equal tempered scale for music generation is one among many methods of doing so. Most pleasant to the ear and voice could be C=512, the scientific scale which is numerically superior to others as C also will equal one cycle per second.



A=440 is commonly used as the American Standard Tuning. However, we need to see music as more than notes and scales but as chords and harmony, melody and rhythm. The 12<sup>th</sup> root of 2 is the multiplier for the equal tempered scale. This is based on irrational numbers.

It proceeds in perfect fifths.  $1/1$   $3/2$   $9/4$   $27/8$   $81/16$ .

Basic Pythagorean tuning proceeds in major thirds. This ratio is  $5/4$ .  $4/1 \times 5/4 = 5/1$ . This =  $80/16 = 5$ .

Certainly, this is in accord with the numeric roots of PhiG which is derived from  $\sqrt{5}$ .

## THE COSMIC SPECTRUM

1. The Center of the Universe.

Is there a center to the Universe? This sounds like a simple enough question but it turns out it is much more.

Spatially, it is a question of the type of Geometry one imposes on the universe in the first place. Negative or positive curvature geometries and Euclidean geometries give different centerpoints. It is not yet known if the universe is one or the other, although the empirical evidence shows that the universe is Euclidean to a high degree. That General Relativity is accurate within virtually all empirical methods of research shows that positive curvature does yield the mathematics of gravity extremely well. While negative curvature showed itself to be a geometrical statement of magnetic forces as in the work of Gauss. This is interesting and significant. It would appear on the face of it that it would require ALL THREE forms of geometry to encompass the universe and there would also be THREE CENTERPOINTS in our universe. Is there a center? INDEED!

A gravitational center, a magnetic center, and an Electromagnetic center representing the three geometries.

This can be thought of as the FUTURE (magnetic, formative forces with NEGATIVE curvature) arriving in the PRESENT become Euclidean to the avenues of perception. When our attention is focussed onto the microrealms of atoms and subatoms, things appear to be positively curved, forming ever smaller substructures. These structures are connected with the PAST through "world lines."

PAST POSITIVELY CURVED GEOMETRY

PRESENT EUCLIDEAN GEOMETRY

FUTURE NEGATIVELY CURVED GEOMETRY

PAST GRAVITATING MASS

PRESENT ELECTROMAGNETIC FORCES

FUTURE MAGNETIC FORCES

The centerpoint of the past is the origin point in spacetime as is put forward in the Big Bang Theory of the origin of the universe. This theory relies too much on the past-positive geometry of gravity and mass.

It is probably not correct for this reason.

The centerpoint of the present is nowhere to be seen because we can only look at signals sent some time in the past from stars and galaxies. However, there is much to be said for locating the centerpoint of the EM-present in the narrow band of visible light rather than in some geometrical segment of space we cannot see in its true present state. This means just this; the visible spectrum contains most of the Electromagnetic energy in all the universe. The Infrared, Ultraviolet, gamma ray, radio and the other bands of the Electromagnetic spectrum contain only a tiny fraction of that contained in the visible light spectrum. The reason is that most stars emit strongly in visible colors, evolving from the blues through the yellows to red stars etc. In the whole EM spectrum the visible part is a very narrow portion, similar to a laser being a focussed narrow band of visible light. This indicates a centerpoint which should come in handy when investigating aspects of the universe.

The centerpoint of the future is something else.