THE SCIENTIFIC PANACEA OF LUMINIFEROUS AETHER

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Abstract: The recognition and utilization of the digital nature of light mandates a virtually infinite population of particulate digits to account for visual acuity. Temperature defines radiation frequency which establishes it as the pressure of a luminiferous fluid. Temperature is omnipresent. Radiation pressure is the source of all energy. All large cosmic entities are spherical. A sphere is the minimum volume product of external pressure. The source of this pressure is geometric inverse square law magnification of spatial pressure which forms gravitational fields. The interaction of theses fields unifies and defines all the forces of nature. The dimensions of Newton's gravitational equation are the dimensions of radiation shielding. The properties and behavior of a luminiferous aether are derivable from accepted and established data.

Introduction

It has been stated ([1], p. 15), that one of the best-kept secrets of science is that physicists have lost their grip on reality. This is paramount to saying that they accept magical phenomena. Dogma is the basis for religion and does not meet the fundamental causality requirements of valid science. Logical cause and effect criteria can only be applied to conceivable phenomena. Conception is the source of reality. Hence, the restoration of reality to physical science must be the primary goal of the new millennium. This mandates pursuing the fundamental causality of apparent but unexplained forces. The derivation of luminiferous aethereal fluid properties from existing data provides a causal basis which unifies action at a distance forces. Scale accounts for their magnitude.

The acceptance of the Michelson-Morely ([2], p. 369) experimental results as proof that space is a void was a mistake. The experiment was ill-conceived and was looking for the wrong result. Light is a wave. A wave is a non-inertial transmission of energy without mass through-flow. Since the velocity of the particles of the transmitting medium is relatively equal and opposite to the velocity of the wave particles, transmission velocity does not vary with source velocity. M&M should have looked for a frequency change (Doppler Shift) instead of a velocity change. A subsequent experiment ([3]), by E. W. Silvertooth detected a frequency shift, from which he calculated earth's velocity relative to absolute space was 378 km/sec. This experiment clearly negates M&M conclusions and establishes the existence of an aethereal medium.

The COBE satellite established a universal background temperature of about 2.7 degrees Kelvin. Temperature is established as the source of energy and is quantitated as the reciprocal of the measured coefficient of gaseous expansion. Since temperature is measured by expansion, it is evident that whatever causes the expansion penetrates and permeates the expanding entity. The universal presence of temperature establishes correlation with the pressure of an omnipresent gaseous fluid capable of penetrating "gross" ([2] p.530) matter and exerting virtually irresistible expansion force.

Light is a digital phenomenon. It penetrates matter and exerts pressure on constituent electrons. Electromagnetic radiation pressure is the initial source of all energy. Cosmic bodies of significant size are all spherical. Spherical formation results from the exertion of external fluid impulse acting on collective mass and confining it to minimum volume. A body immersed in a gaseous fluid interferes with the motion of the

fluid particles. The interference concentrates the surrounding fluid particles increasing pressure and organizing random fluid energy. A field around a body is formed from concentric isobaric spheres. The surface pressure of each sphere is constant and decreases radially outward in accordance with logarithmic square law. In earth's atmospheric field the outward molecular pressure equals the inward confinement impulse of aethereal fluid. The pressure balance establishes a stable essentially steady state field. The formation of a field by geometric concentration organizes random particulate action and increases available energy levels. Effectively the immersed body focuses fluid energy like a three dimensional magnifying glass. It is a negative entropy phenomenon. The mechanics of field formation is confirmed by the gravitational field of the moon. The moon and the earth occupy the same region of the suns gravitational field. Therefore, they have the same external aethereal fluid pressure environment. The Apollo probes entrance into the moons gravitational field encountered a gravitational acceleration much greater than anticipated. Moon gravity is proportional to the ratio of its diameter to earth's diameter. Hence, gravity is proportional to surface area divided by displacement. Newton's equation is not consistent with Galileo's demonstration that objects of different mass fall at the same rate. Gravitational acceleration is not proportional to mass, but it is a function of displacement. The cohesive focusing of external pressure produces the apparition that gravity is a property of mass. The dimensions of Newton's gravitational equation are the dimensions of radiation shielding. The equation is valid for bodies of equal density and low radiation energy levels. Although Venus is slightly smaller than the earth, it occupies a denser region of the sun's field and its gravity is therefore greater. This accounts for its higher atmospheric and surface temperature.

The earth's orbital passage in an aethereal fluid produces drag which would be expected to degrade its orbital position. Since orbital degradation is not apparent there must be a force acting which offsets the drag. Solar radiation pressure must exert this centripetal orbit preserving force. Variations of solar radiation change this force balance which alters the earth's orbit and produces temperature and climatic changes.

De Broglie equated Planck's energy (hf) to Einstein's energy (mv^2). Planck's energy is the number of h's per unit time. Einstein's energy is the summation of the energy of a number of particles. Planck's frequency is the number particles that make up a quantum. The number of particles which makeup Einstein's mass equals Planck's frequency. Hence, h is the energy transmitted by a radiation particle traveling at the local speed of light. The accepted dimensions of h failed to recognize that Planck's frequency cancels Einstein's number of particles. The dynamic quantum energy attribute (hf) is only the summation of particle energy that makes up a quantum.. The static attribute of photon mass is 0 because the particulate mass is introduced by the particle energy h. Recognition of h as the local energy of a radiation particle enables the calculation of aethereal particle mass.

The radiation particle is the photon. Its mass is 7.375×10^{-48} grams as established by substituting the local velocity of light and Planck's constant into De

Broglie's equation at a frequency of 1 Hertz. Since the average of random media particle velocity is zero and the pressure of the wave equals the resistance of the medium, the particulate density can be calculated by dividing the resistance of the media by the wave energy. The resistance of the media is its volumetric pressure which is temperature. At standard conditions the particulate density is 4.124×10^{28} particles per cc. This is about 10 billion times Avagadro's Number and is consistent with the far greater resolution of visual inputs relative to sonic inputs. The media density is about 10^{-14} times the density of Hydrogen at Standard Conditions. This accounts for the apparent emptiness of space.

Schroedinger's Wave Equation (S. W. E.) is the heart of Quantum Mechanics. When mc^2 is substituted for h, the equation is reduced to a wave energy transfer function. S. W. E. is the summation of particle kinetic energy times the ratio of projectile to target particle mass times the frequency harmonic multiple squared. Frequency is proportional to particle velocity which is proportional to the square root of particle energy. Therefore, harmonic multiple squared is proportional to wave energy. The potential well which is used to illustrate the significance of S. W, E., is only a half wave resonant cavity. Quantum mechanics is an abstract application of Ideal Gas Law coupled with Fourier analysis to segregate the principle frequency components which constitute the wave. One improvement on Ideal Gas Law precepts is the spin direction attribute which provides two degrees of rotational freedom. This recognizes that spin direction is a polar quantity which is defined by the two dimensions of particle surface area and can be defined by spherical harmonics. This agrees with the ratio of specific heats as defined by equipartition of particle energy between five degrees of freedom. Quantum Mechanics principles can be applied in several ways. Feynman's sum of histories approach and representation of probability as the square of vector velocity is only a vector depiction of square law. Quantum mechanics becomes conceivable with the recognition of temperature as the pressure of an aethereal fluid made up of photons. Although the mechanics of quantum theory are modeled on Ideal Gas Law the treatment of Planck's Constant as a magical entity has obfuscated its reality.

The dimensions of Newton's empirical equation for gravity provides the clue which unifies and explains action at a distance forces. Objects immersed in aethereal fluid mutually shield each other from the surrounding fluid impulse which forms their fields. This shielding introduces an impulse pressure imbalance which equates to a pressure decrement between the objects. Since the field pressure acting on immersed entities is proportional to displacement divided by surface area and mass is proportional to density times displacement, the cohesive force acting on these entities in equivalent scalar position is proportional to their diameter. At atomic scale the force acting is very small so that its cohesive value is most conceivably expressed by the acceleration resisting separation. The calculated acceleration resisting the separation of two contiguous protons is about 5.6×10^6 gravities. The mechanics is equivalent to the cohesion produced by molecular fluid pressure on directly sensible macroscopic objects joined together in a manner not penetrated by atmospheric molecules.

Einstein's assumption that light velocity was a universally constant material limit made it impossible to treat a light wave in the same manner as a sound wave. This is inconsistent with the applicability of Fourier Analysis to both light and sound and required infinite mass at luminal velocity. There is no logical mechanical reason or available data which conflicts with the analogous behavior of light and sound. The frequency of a wave is determined by its particle velocity which must exceed its transmission velocity in proportion to its frequency. Wave action criteria contradict Einstein's maximum velocity assumption. A Doppler shift can not transpire in empty space. The Doppler frequency shift detected in rotating galaxies can only occur in a medium. Frequency shifts also result from attenuation. The increase in intervening field density produces the observed red shift at sunrise and sunset. The presence and resistance of a spatial medium indicates that Hubble's Constant is probably an attenuation shift. This is supported by the radial symmetry of the Constant which would place the earth at the center of the Big Bang. The popular balloon analogy used to demonstrate universal expansion only applies relative to its point of origin.

The increase in impulse induced cohesive force at atomic and sub atomic scale obsoletes the electrical theory of matter and the concept of charge as a property of matter. Charge is relegated to the effect of less or more pressure. All phenomena can be conceivably explained without treating charge as a material property. Photon induced cohesion forms stable proton structures. The number of protons in the stable assemblies agrees with the atomic weights of stable isotopes in the Periodic Table of Elements. The contiguous joining of two protons is a unit bond. Multiple bonds increase structural integrity. A single proton is a Hydrogen atom. Electrons may be present but play no role in atomic structure. The smallest stable contiguous proton structure is the Helium Atom made up of 4 protons, 2 deuterons or a triton and a proton which form a tetrahedron with minimum 3-bond integrity. The smallest 4-bond structure is an octahedron formed from 6 protons which is Lithium 6. The next stable atom is the Lithium 7 decahedron formed from 7 protons. It is formed from a 5 proton pentagonal array surrounding a terminal proton pair. The mutual contiguity of all its protons increases its integrity relative to Lithium 6 and accounts for its greater natural abundance. Beryllium 9 is the 4-bond twinning of the Lithium decahedron. Boron 10 and 11 are the tripling and quadrupling of Lithium 7 structure. The Carbon isotope sequence (10 through 15) results from a twinning of the Lithium 7 decahedron normal to its pentagonal cross-section. The prevalent isotopes (12 and 13) have 6 or more open 4-bonds which enable formation of hexagonal matrix organic molecules. Oxygen 16 is the smallest minimum 5-bond structure. It is a regular truncated tetrahedron with 4 identical hexagonal faces formed by 7 contiguous protons. Nitrogen 14 & 15 are the Oxygen 16 structure less 1 or 2 protons (pale blue).

HELIUM 4 LITHIUM 6 LITHIUM 7 BERYLLIUM 9 BORON 10 &11 CARBON 12 OXYGEN 16 / NITROGEN 14 &15
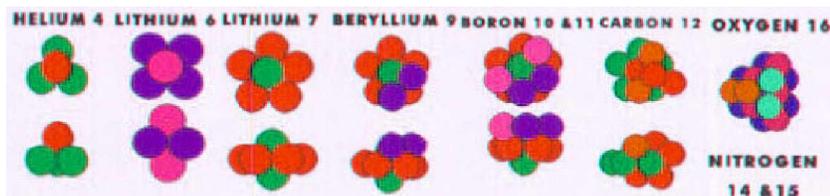
CONTIGUOUS PROTON STRUCTURES OF SMALL ATOMS

The contiguous protons form internal passages and interstices large enough to pass or contain electrons and photons. Gross matter is permeated with photons and electrons. The internal passages are the cooling system of the atom. These passages are the source of the high frequency radiation pulses which form the atoms spectral signatures. External temperature defines the impulse energy input and hence the spectral intensity. The internal temperature of large atoms is the source of fluorescence, luminescence and radioactivity. Since Hydrogen has a spectral signature, the proton is also a compound particle which is permeated with photons. In the absence of charge the proton may be formed from electrons. Electrons cling to the external and internal surfaces of atoms where they are most shielded from aethereal fluid impulse. The photon energy transfer to an electron is nearly 10^4 times as great as the energy it transfers to an atmospheric molecule because of the lesser electron mass. The transfer of energy from an electron to atmospheric molecules is therefore about 10^8 times the energy transferred from a photon to an atmospheric molecule. The photon pressure on gross matter is about 0.1 grams per square centimeter at Standard Conditions. This establishes the mechanics which explains temperature as the source of electrical and mechanical energy. Energy is not an entity. It is the dynamic behavior of matter.

The reflectivity of the electron has been considered to result from its physical size. Reflectivity logically results from a lack of penetration. Protons and atoms are permeated by photons but electrons are not. The high reflectivity indicates that the electron is formed from particles with insufficient separation to pass photons. The passage of electrons through atomic conductors confirms that the high reflectivity of electrons can not be attributed to its size. The diameter of the photon, based on a spherical shape, can be calculated using Boltzmann's Collision Frequency or Mean Free Path equations (Diameter=$(F_c/pi \times n \times v)^{1/2}$). At a collision frequency of (1 Hz), particulate density (n) of (4.124×10^{28}/cc) and velocity of (2.9978×10^{10} cm/sec.) photon diameter equals (1.605×10^{-20}cm.).

The necessary mechanics of digital chromatic vision requires an aethereal particulate medium. This requirement is met by the particulate population, dimensions and energies derived in the preceding pages. The eye is a digital camera. The retina is a surface with photon velocity sensitive pixels in a molecular spaced array. Color is a specific frequency which results from a specific photon velocity. Every nuance of an image, even when greatly magnified, must be imparted by individual photons. The

image can be focused and is preserved at any scale which explains the Holographic Paradox. The retina curvature maintains the spacing between the pupil and its surface which preserves the plane of the discerned image. The circumferential eye muscles vary the retina curvature and distance from the pupil to bring specific portions of the image into focus. The focusing curvature adjustment maintains the image plain because each unique frequency digit of light travels the same distance between the pupil and retina.

The behavior of light substantiates its digital wave nature. Wavelength is the average energy transmission distance traveled by a wave photon to transfer its kinetic energy to a media photon. Frequency is the number of energy transfers per unit time. The wavelength of light is much less than the thickness of most transparent materials. Therefore, the wave photons do not pass through these materials. A prism organizes the constituent frequencies of white light. The internal photon pressure within the prism's interstices is determined by the velocity of the white light particles. The frequency of the light exiting the prism is proportional to the photon input pressure. The input pressure defines penetration. This explains why prismatic organization is contrary to the retardation of a lens and the highest spectral output frequency travels the greatest distance through the prism. The prism exit frequencies are reduced relative to the input frequencies. The input image is preserved by the pressure distribution within a transparent material. Hence, the exit image, which is made up of former permeating particles, is essentially identical when the material input surface is parallel to the output surface. Although the color of objects is produced by the reflection of white light, the specific reflected colors must be produced by surface structural resonances. Molecules of colorless gases, which make up the atmosphere, must also preserve the emitted photon image plane although distortion is evident when the temperature in the plane varies. This distortion results from the variation in light velocity with media density. This change in velocity is demonstrated by the gaseous lens telescope. The only concept which logically explains light behavior is a universal aethereal fluid.

The small mass of the electron, its reflectivity and surface confinement by photon pressure explain static electricity. The energy transferred by photon impulse to the confined electrons exerts pressure normal to the impulse direction. Hence, electron pressure is proportional to surface area. One of the most dramatic results of this behavior is the thunderstorm. When water evaporates, the available molecular surface area increases significantly. Electrons flow onto the gaseous molecules from the liquid. Gaseous water molecules have slightly less density than prevalent atmospheric atoms and molecules. The molecules rise to an altitude where their is insufficient photon pressure to maintain their separating force. Cooling initiates condensation into the small droplets which form clouds. The condensation reduces available surface area and increases electron pressure. Clouds are coherent entities formed as a result of liquid droplet interference with atmospheric particle impulse. They tend to concentrate around mountains which shield them from atmospheric impulse. Cumulus clouds exhibit the textural sphericity of external confining pressure. When droplet mass exceeds cohesive force, the droplets fall. Initially the droplets evaporate before they reach the ground

producing virga. As they evaporate the water molecules adsorb electrons from the atmospheric molecules. The electron depleted atmospheric molecules adsorb electrons from the earth producing observable corona at points of electron concentration such as trees, tall entities or electron conductors. The electron potential of the cloud mass increases until great enough to produce lightning. The concentrated discharge of electrons which form the lightning bolt displace the atmospheric molecules that produce thunder and the photons which make it visible. The cohesion of bolt and ball lightning confirms that electrons do not repel each other when sufficiently concentrated. The lightning bolt travels at supersonic speed but significantly slower than the speed of light. The electron is too massive to locally transmit energy at luminal velocity.

Molecules are structures of atoms and/or other molecules. The presence of surface electrons and the shape of their components defines their structural integrity. Molecules do not have the integrity of contiguous proton bonded atoms. Molecular bonding produces heat in inverse proportion to the exposed surface area of the molecule relative to the summation of the exposed surface area of its constituents. This is the Provence of Chemistry. All chemical reactions which increase molecular size produce energy in the form of heat, light and/or electron pressure. The role of catalysts is to concentrate molecular components by organizing random liquid particle impulse. The reacting constituents are larger than the solvent molecules. The organization of impulse concentrates them around the still larger catalyst particles which increases the rate of reaction. Organized liquid fluid action is analogous with a gaseous fluid field except that there is no static pressure gradient since a liquid is not compressible. The mechanics is evident as solid crystal formation in a supersaturated solution. The formation of rock candy is an example. The reaction rate is also increased by heat which increases the impulse of the organized solvent particles. All reactions which dissemble molecules, such as electrolysis, require input energy. The order of material integrity is atom, molecule, crystal, alloy and mixture.

The equations of electromagnetic behavior were derived by Maxwell on the basis of electrical and magnetic properties and his concept of an aethereal fluid ([2] p.528-538). These equations are entirely consistent with the preceding definition of aethereal fluid and electrical and electronic phenomena. However, conventional explanations need modification to conceptually understand the mechanics involved. Electrical current is not electron flow. Electrical energy is transmitted by a compound wave of electrons and photons. This is why it makes no difference which direction of flow is assumed or if the direction alternates. The source of magnetic flux is the displacement of spinning photons from the conductor. The source of photon spin is contact with rolling , surface confined, electrons. The reaction of the spinning photons to the surrounding photon medium produces the lines of force. Lines are produced by layers of spinning flux separated by counter rotating media photon eddies which act like ball bearings. Magnetic flux is directional and the direction of reacting electron pressure is normal to it because of the surface confinement of electrons. An electromagnetic wave is a propagation of spinning photons which can be modulated by

varying spin, particle velocity or pulse frequency to transmit information. The field of a permanent bar magnet is a doughnut shaped vortex generated by electron eddy currents which persists after initiation due to the compression of the magnetic field by external photon media pressure. The nature of the mechanics is confirmed by demagnetization methods which disrupt the field confinement force. The difference in available surface area of dissimilar materials produces thermocouple voltage variation with temperature which is detected relative to a constant temperature reference junction. The transistor consists of materials having different internal surface areas which alters their resistance to electron pressure which is voltage. The voltage difference resists electrical energy transmission in a given direction. This accounts for the temperature sensitivity of transistors. Electric generators utilize the impulse of magnetic flux on electrons to generate electricity. Electric motors utilize the reaction of magnetic flux to electron pressure to produce motion. Explanation of the mechanics does not impact current electrical methodology but it does provide the long absent conceivable explanation of the basis for Maxwell's Equations which has been treated as a mystery by the scientific establishment.

The functioning of the human organism exemplifies the action of complex organic molecule formation. The process correlates with evolution at a greatly accelerated rate. The blood is maintained within relatively small limits of temperature and pressure which dictate the formation rate of cloned molecules. The molecular building blocks are organic molecular segments ingested from food. The blocks are assembled into molecules by the organized impulse of the solvent blood molecules. The process is a trial and error cohesive process where only the best fit structures survive at normal body temperature. Increasing temperature decreases the rate of formation and will dissemble and destroy the complex molecules if the increase is too great. Reduced temperature preserves the structures but reduces the rate of formation. Blood pressure maintains the structures but may exceed their cohesive integrity. Life is only enabled and preserved by the closely controlled temperature and pressure environment of critical dynamic bodily functions. Involuntary ingestion of viruses, germs or heavy metals interfere with the molecular formation process. The bodies initial reaction is an increase in blood temperature which interrupts formation of undesirable molecules and destroys organic invaders. Medicines provide either natural (antibodies) or tailored molecules which react with the invaders to render them non-toxic. Blood is a cloning fluid.

An aethereal fluid was initially postulated by Gottfried Wilhelm Leibniz who was the inventor of the infinitesimal calculus. "He believed that analysis would enable us to limit the number of undefined concepts to a few simple primatives in terms of which all other concepts could be defined." ([4] p. 166). In " THE PRINCIPLES OF NATURE AND OF GRACE" He postulated the "monad' as a basic shapeless omnipresent digit, having mass and velocity, from which all "complex" substance is formed. ([5]p.360-61) Shape is produced by envelope irregularities. Therefore a sphere can be considered shapeless since it only varies in diameter and pi is constant. He reasoned that if the basic particles had shape they would have parts. His archaic

denomination of energy as "appetition" and 'tendencies" as direction compounded by his designation of action as life has obscured his logic. However, translation to contemporary idiom, reveals it as a strong logical argument for aethereal fluid and provides a conceivable first cause.

The local concentration of particles in a state of random motion is not constant. The fact that a concentration of particles interferes with random motion and organizes surrounding particle impulse to sustain the concentration provides the mechanical source of negative entropy which concentrates matter. The magnitude of the concentration is limited by the amount of particle energy which can contain the pressure within a concentration. The concentrating impulse exerts 3 dimensionally focused external force which contains the concentrations in spherical form. The confining impulse transfers energy to the contained particles. The internal energy increases logarithmically inward in proportion to spherical surface area. Conversely fundamental mass concentration decreases exponentially with distance from the concentration center. Specific conditions within the mass concentration form discrete mass increments which are stable and survive under local or less rigorous conditions. This concept provides the mechanical criterion for either an unbounded or ultimately contained universe.

All facets of the first cause scenario are confirmed by astronomical observation. Hydrogen clouds form stars. Stars radiate photons displaced by fusion. Hydrogen fusion forms atoms. The atoms are buoyant in the surrounding plasma and are bourne radially outward forming a spherical shell. Radiated photon pressure forms an essentially stable field logarithmically decreasing radially outward in equilibrium with the confinement of the surrounding medium. The shell expands as the atoms accumulate and opacity increases. Internal energy increases. Since opacity is decreased by expansion, any reduction in radiation frequency would increase intensity minimizing the change in radiated energy. The only directly observable change would be the gradual increase in stellar diameter. As internal energy increases, larger atoms are formed accelerating the opacity increase and shifting radiation frequency toward the red. When the pressure within the shell exceeds the containment pressure, it bursts. The internal plasma and shell remnants form an expanding nebula around a very dense high temperature core. The initial high frequency radiation of the core decreases as it cools. The relief of containment pressure on the core as it cools allows it to expand. As it cools, the expansion adsorbs its radiant energy further decreasing containment pressure. When pressure drops sufficiently, the core no longer radiates energy. It has become a black hole which is radiating mass and adsorbing energy. The surrounding adsorption energy gradient has the properties of a shielding mass which produces a strong cohesive action indistinguishable from gravitational shielding. The astronomical stellar life cycle is analogous with a cosmic change of state. The condensing sun, the nebular vaporization and the black hole evaporation and ablation correlate with observation.

Discrete particulate mass increments can be produced under transient cycle conditions. The logarithmic distribution of stellar mass defines the radial distribution of its constituents. The greatest mass is at the core and would be made up of contiguous

photons surrounded by zone of contiguous protons. The extrusion of contiguous photons through the proton layer would form electrons some of which would be compressed by the surrounding plasma pressure to form protons. The surrounding layer of turbulent plasma forms protons into the buoyant atoms which are impelled outward to form the solar surface. All of the particulate participants present on earth are present within the surface and plasma region of a star. Sunspots correlate with vulcanism on earth and increase the heat rejection from the solar core which stabilizes the spherical solar structure.

Solar system formation is relatively simple. Nebular collapse begins when expansion energy is expended to the background level. The mass distribution is still logarithmic and is retained during the collapse. The interference of the greater central mass organizes aethereal fluid action forming fields. The Nova explosion may not produce a symmetrical distribution of stellar matter. If the core fissions, a binary or other multiple mass concentration system may be formed. Nebular expansion slows as central core mass radiation ceases. When expansion energy reaches background levels nebular collapse begins. The adsorption of energy by the expanding core establishes a pressure decrement. When the expanding core pressure is exceeded by the collapsing nebular impulse, normal gravitation is restored and core compression begins. At this point the core has expanded to form a Hydrogen cloud. The compression of the core produces radiation which slows the collapse. The radiation pressure balances the radial inward gravitational force acting on nebular mass constituents with sufficient orbital velocity. Accumulation of orbiting mass begins. Orbiting mass is concentrated by mutual shielding induced cohesion. Local cohesion is greatest in regions most shielded from solar radiation pressure. Mass cohesion in a compressible fluid is a regenerative process. The orbital velocity of the planets decreases logarithmically in proportion to the logarithmic increase in orbital radius. The distribution of nebular particles varies radially. Assuming equal energy per particle, diffusion velocity is inversely proportional to particle mass. Mass concentration is greatest nearest the sun. The velocity required to maintain an orbit is also greatest nearest the sun. This establishes the innermost planet as the initial object formed in the ecliptic plane. Cohesion of the subsequent radially outward mass would be initiated in its shadow. Orbiting masses sweep material from their orbital path. Drag increases with mass accumulation reducing orbital radius. Mass increase is proportional to swept radius. Density decreases in proportion to field impulse pressure. The greatest concentrations of orbiting mass are formed in the ecliptic plane where their initial local cohesion originated. The cohesive origin of a solar system is the collapsing of a nebula confined by external aethereal fluid pressure. Although the details are complex, the probable causes are consistent with the characteristics of our solar system. More data is required to clearly define the probable scenario.

The earth is a large droplet of hot fluid incased in a thin spherical shell. The rigors of its metamorphosis are indelibly imposed on its geological structure. The role and behavior of the shells weaknesses defines the natural actions which maintain its

stability. Spherical shape is maintained by the external surface pressure exerted by its molecular atmosphere. Temperature is determined by solar and spatial radiation input. Structural equilibrium is maintained by heat rejection. The principal source of rejection is the heat of fusion from solidification of magma extruded into the oceans. Vulcanism is the other significant source. The end result determines atmospheric temperature which in turn quantifies the radiation to the spatial heat sink and surrounding aether. The source of heat is geometric focusing of external impulse energy which is quantitated by temperature. The temperature lapse rate in the lower atmosphere is about 2 degrees C per 1000 feet of altitude. The rate increases to about 6 degrees C in the outer surface shell. The lapse rate increases logarithmically with depth. At about 2000 feet below sea level the shell temperature has increased by about 50 degrees C. At this level the pressure may cause shell material fragmentation which bursts into open areas. Most mineral deposits are hydrothermally formed by supersaturated aqueous solutions or the solidification of exuded vapor. They are concentrated around the fractures in the crust which maintain sphericity and are most penetrated by water and exuded vapor. Earthquakes result from crust adjustments triggered by tidal forces introduced by radiation shielding and/or heat rejection adjustments.

The radiation shielding of cloud cover reduces atmospheric pressure. A local pressure decrease reverses the Coriolis force gradient. The Coriolis gradient results from the viscous drag of the earth's rotating surface on aethereal fluid. These effects are the source of and are clearly consistent with weather phenomena. The radiation shielding of the earth's atmosphere is produced by the atmospheric attenuation of incoming radiation. The attenuation is a decrease in average electromagnetic wave particle velocity which reduces wave frequency. The wave energy reduction forms the tropopause. Solar radiation pressure produces the teardrop form of the magnetosphere. It also produces the atmospheric temperature disparity with surface temperature between tropical and polar atmospheres. The polar temperature at altitude is 16 degrees C hotter than the tropical temperature at altitude. The molecular compression of the tropical atmosphere is exerted on the polar atmosphere increasing heat radiation to the spatial heat sink. This is the source of the aurora and the summer increase in its brilliance. The agreement of the Stephan-Boltzmann equation for energy radiation with gaseous diffusion confirms the particulate action of aethereal fluid. Substituting dt for dc in the equation for gaseous diffusion and multiplying by temperature (t), which is aethereal pressure, the definite triple integration between source and heat sink temperature defines black body radiation. The fact that Ohm's Law equations pertain to radiation, heat transfer, electrical and molecular fluid phenomena confirms the analogous behavior of these fluids.

The evidence supports aethereal fluid action as a logical common causal source for all dynamic physical phenomena. Matter is defined by its resistance to energy and energy defines the distribution of matter. Hence, the presence of an aethereal fluid validates Mach's Principle. Einstein's equation for energy does not equate mass and energy. It simply defines the summation of mass action as energy.

Light velocity and Planck's Constant can only be locally constant. The application of logical aethereal fluid mechanics to replace mystical and cookbook assumptions restores conceivable physical reality. Reality provides a causal basis which will ensure the rejuvenation and progress of science for the millenium.

REFERENCES

1. Nick Herbert; Quantum Reality , Anchor Press/Doubleday, Garden City, New York, USA.
2. William Francis Magi; A SOURCE BOOK in PHYSICS, HARVARD UNIVERSITY PRESS, Cambridge, Massachusetts, USA.
3. E. W. Silver tooth; Applied Optics Journal, May 15, 1976.
4. Dagobert D. Runes; Dictionary of Philosophy, Littlfield, Adams & Co. Ames, Iowa.
5. T. V. SMITH & MARJORIE GREEN; FROM DES CARTE TO KANT. THE UNIVERSITY OF CHICAGO PRESS, CHICAGO ILLINOIS.