986.00 T and E Quanta Modules: Structural Model of E=mc²: The Discovery that the E Quanta Module Is the True, Experimentally Evidenceable Model of E=mc²

[986.00-986.874 Demass Model Scenario]

986.010 Narrative Recapitulation

986.011 The exposition herein recounts and recapitulates the original surprise and excitement of the progressive, empirically verified conceptionings; the family of relevant experimental-evidence recalls; the modus operandi; the successive, only-evolutionarily- discovered inputs; and the synergetic comprehension of the omniinterresultant cosmic significance of these strategically employable, synergetically critical additions to human knowledge and their technologically realizable insights.

986.020 Elementary School Definitions

986.021 My first mathematics and geometry teachers taught me games that I learned to play well enough to obtain swiftly the answers for which their (only-axiomatically- argued) assumptions called. Webster's dictionary states tersely the definitions of the games they taught me. Webster's definitions are carefully formulated by leading academic authorities and represent the up-to-the-minute concensus of what the educational system assumes *geometry, mathematics,* and *science* to consist.

986.022 Webster defines *geometry* as "the mathematics of the properties, measurements, and relationships of points, lines, angles, surfaces, and solids"—none of which we ourselves observe can exist experientially (ergo, science-verifiably), independently of the others; ergo, they cannot be isolatable "properties" or separate characteristics.

986.023   Physics has found no surfaces and no solids: only localized regions of high- frequency, self-interfering, deflecting, and consequently self-knotting energy events. These self-interference patterns occur in pure principle of ultra-high-frequency intervals and on so minuscule a scale as to prohibit intrusion by anything so dimensionally gross and slow as our fingers. We cannot put our fingers between any two of all the numbers occurring serially between the integer 1 and the integer 2,000,000,000,000—two trillion—as aggregated linearly in one inch. This is the approximate number of atomic domains (the x- illion-per-second, electron-orbited atoms' individual spinout domains) tangentially arrayable in a row within an experience inch.

986.024   Within each of the electron-orbited spheric domains the respective atomic nuclei are centered as remotely distant from their orbiting electrons as is our Sun from its orbiting planets. Within each of these nuclei complex, high-frequency events are occurring in pure principle of interrelationship.

986.025   How do you see through a solid-glass window? Light passes through glass. Light is high-frequency radiation passing unobstructedly at 700 million miles per hour with lots of time and room "to spare" between the set of energy events that constitute the atomic-event constellation known as "glass." (In lenses the light caroms off atoms to have its course deliberately and angularly altered.)

986.026   Webster's definition of *mathematics* is "the science of dealing with quanitites, forms, etc., and their relationships by the use of numbers and symbols."

986.027   Webster defines *science* as "systematized knowledge derived from observation and study."

986.028   In respect to those definitions I was taught, between 1905 and 1913 at the private preparatory school then most highly regarded by Harvard, that "the properties of a point" are nonexistent—that a point is nondimensional or infradimensional, weightless, and timeless. The teacher had opened the day's lesson by making a white chalk mark on the cleanly washed-off blackboard and saying, "This is a point." I was next taught that a line is one dimensional and consists of a "straight" row of nondimensional points—and I am informed that today, in 1978, all schoolchildren around the world are as yet being so taught. Since such a line lacks three-dimensionality, it too is nonexistent to the second power or to "the square root of nonexistence." We were told by our mathematics teacher that the plane is a raft of tangentially parallel rows of nonexistent lines—ergo, either a third power or a "cube root of nonexistence"—while the supposedly "real" cube of three dimensions is a rectilinear stack of those

nonexistent planes and therefore must be either a fourth power or a fourth root of nonexistence. Since the cube lacked weight, temperature, or duration in time, and since its empty 12-edged frame of nonexistent lines would not hold its shape, it was preposterously nondemonstrable—ergo, a treacherous device for students and useful only in playing the game of deliberate self-deception. Since it was arbitrarily compounded of avowedly nonexistent points, the socially accepted three- dimensional reality of the academic system was not "derived from observation and study"—ergo, was to me utterly unscientific.

986.030 **Abstraction**

986.031   The scientific generalized eternal principle of *leverage* can be experientially demonstrated, and its rate of lifting-advantage-gain per each additional modular increment of lifting-arm length can be mathematically expressed to cover any and all special case temporal realizations of the leverage principle. Biological species can be likewise generalizingly defined. So in many ways humanity has been able to sort out its experiences and identify various prominent sets and subsets of interrelationship principles. The special- case "oriole on the branch of that tree over there," the set of all the orioles, the class of all birds, the class of all somethings, the class of all anythings—any one of which anythings is known as X . . . that life's experiences lead to the common discovery of readily recognized, differentiated, and remembered generalizable sets of constantly manifest residual interrelationship principles—swiftly persuaded mathematical thinkers to adopt the symbolism of algebra, whose known and unknown components and their relationships could be identified by conveniently chosen empty-set symbols. The intellectuals call this *abstraction.*

986.032   Abstraction led to the discovery of a generalized family of plus-and-minus interrelationship phenomena, and these generalized interrelationships came to be expressed as ratios and equations whose intermultiplicative, divisible, additive, or subtractive results could—or might—be experimentally (objectively) or experientially (subjectively) verified in substantive special case interquantation relationships.

986.040 **Greek Geometry**

986.041   It was a very different matter, however, when in supposed scientific integrity mathematicians undertook to abstract the geometry of structural phenomena. They began their geometrical science by employing only three independent systems: one supposedly "straight"-edged ruler, one scribing tool, and one pair of adjustable-angle dividers.

986.042   Realistically unaware that they were on a spherical planet, the Greek geometers were first preoccupied with only plane geometry. These Greek plane geometers failed to recognize and identify the equally important individual integrity of the system upon whose invisibly structured surface they were scribing. The Euclidean mathematicians had a geocentric fixation and were oblivious to any concept of our planet as an includable item in their tool inventory. They were also either ignorant of—or deliberately overlooked—the systematically associative minimal complex of inter-self-stabilizing forces (vectors) operative in structuring any system (let alone our planet) and of the corresponding cosmic forces (vectors) acting locally upon a structural system. These forces must be locally coped with to insure the local system's structural integrity, which experientially demonstrable force-interaction requirements are accomplishable only by scientific intertriangulations of the force vectors. Their assumption that a square or a cube could hold its own structural shape proves their obliviousness to the force (vector) interpatternings of all structurally stable systems in Universe. To them, structures were made only of stone walls—and stone held its own shape.

986.043   The Ionian Greeks seem to have been self-deceived into accepting as an absolute continuum the surface of what also seemed to them to be absolutely solid items of their experience—whether as randomly fractured, eroded, or ground-apart solids or as humanly carved or molded symmetrical shapes. The Ionian Greeks did not challenge the self-evident *axiomatic* solid integrity of their superficial-continuum, surface-face-area assumptions by such thoughts as those of the somewhat later, brilliantly intuitive, scientific speculation of Democritus, which held that matter might consist of a vast number of invisible minimum somethings—to which he gave the name "atoms." All of the Euclidean geometry was based upon *axioms* rather than upon experimentally redemonstrable principles of physical behavior.

986.044   Webster's dictionary defines *axiom* (etymologically from the Greek "to think worthy") as (1) a maxim widely accepted on its intrinsic merit, and (2) a proposition regarded as self-evident truth. The dictionary defines *maxim* as (1) a general truth, fundamental principle, or rule of conduct, and (2) a saying of a proverbial nature. *Maxim* and *maximum* possibly integratingly evolved as "the most important axiom." Max + axiom = maxim. The assumption of commonly honored, customarily accredited axioms as the fundamental "building-blocks" of Greek geometry circumvented the ever- experimentally-redemonstrable qualifying requirement of all serious scientific considerations.

986.045   The Ionian Greeks assumed as fundamental geometric components their line- surrounded areas. These areas' surfaces could be rough, smooth, or polished—just as the smooth surface of the water of the sea could be roughened without losing its identity to them as "the surface." Looking upon plane geometry as the progenitor of subsequently-to- be-developed solid geometry, it seemed never to have occurred to the Euclideans that the surface on which they scribed had shape integrity only as a consequence of its being a component of a complex polyhedral system, the system itself consisting of myriads of subvisible structural systems, whose a priori structural integrity complex held constant the shape of the geometrical figures they scribed upon—the polyhedral system, for instance, the system planet Earth upon whose ground they scratched their figures, or the stone block, or the piece of bark on which they drew. Even Democritus's brilliant speculative thought of a minimum thing smaller than our subdimensional but point-to-able speck was speculative exploration a priori to any experimentally induced thinking of complex dynamic interactions of a plurality of forces that constituted *structuring* in its most primitive sense. Democritus did not think of the atom as a kinetic complex of structural shaping interactions of energy events operating at ultra-high-frequency in pure principle.

986.046   Cubical forms of wood and stone with approximately flat faces and corner angles seemed to the Euclidean-led Ionians to correspond satisfactorily with what was apparently a flat plane world to which trees and humanly erected solid wooden posts and stone columns were obviously perpendicular—ergo, logically parallel to one another. From these only-axiomatically-based conclusions the Ionians developed their arbitrarily shaped, nonstructural, geometrical abstractions and their therefrom-assumed generalizations.

986.047   The Greeks' generalized geometry commenced with the planar relationships and developed therefrom a "solid" geometry by in effect standing their planes on edge on each of the four sides of a square base and capping this vertical assembly with a square plane. This structure was then subdivided by three interperpendicularly coordinate lines—X, Y, and Z—each with its corresponding sets of modularly interspaced and interparalleled planes. Each of these three sets of interparallel and interperpendicular planes was further subdivisible into modularly interspaced and interparallel lines. Their sets of interparallel and interperpendicular planar and linear modulations also inherently produced areal squares and volumetric cubes as the fundamental, seemingly simplest possible area-and-volume standards of uniform mensuration whose dimensioning increments were based exclusively on the uniform linear module of the coordinate

system—whose comprehensive interrelationship values remained constant—ergo, were seemingly generalizable mathematically quite independently of any special case experiential selection of special case lengths to be identified with the linear modules.

986.048　The Euclidean Greeks assumed not only that the millions of points and instant planes existed independently of one another, but that the complex was always the product of endlessly multipliable simplexes—to be furnished by an infinite resource of additional components. The persistence of the Greeks' original misconceptioning of geometry has also so distorted the conditioning of the human brain-reflexing as to render it a complete 20th-century surprise that we have a finite Universe: a finite but nonunitarily- and-nonsimultaneously accomplished, eternally regenerative Scenario Universe. In respect to such a scenario Universe multiplication is always accomplished only by progressively complex, but always rational, subdivisioning of the initially simplest structural system of Universe: the sizeless, timeless, generalized tetrahedron. Universe, being finite, with energy being neither created nor lost but only being nonsimultaneously intertransformed, cannot itself be multiplied. Multiplication is cosmically accommodated only by further subdivisioning.

986.049　If the Greeks had tried to do so, they would soon have discovered that they could not join tetrahedra face-to-face to fill allspace; whereas they could join cubes face- to-face to fill allspace. Like all humans they were innately intent upon finding the "Building-Block" of Universe. The cube seemed to the Greeks, the Mesopotamians, and the Egyptians to be just what they needed to account their experiences volumetrically. But if they had tried to do so, they would have found that unit-dimensioned tetrahedra could be joined corner-to-corner only within the most compact omnidirectional confine permitted by the corner-to-corner rule, which would have disclosed the constant interspace form of the octahedron, which complements the tetrahedron to fill allspace; had they done so, the Ionians would have anticipated the physicists' 1922 discovery of "fundamental complementarity" as well as the 1956 Nobel-winning physics discovery that the complementarity does not consist of the mirror image of that which it complements. But the Greeks did not do so, and they tied up humanity's accounting with the cube which now, two thousand years later, has humanity in a lethal bind of 99 percent scientific illiteracy.

986.050　**Unfamiliarity with Tetrahedra**

986.051   The distorted conditioning of human reflexing and reasoning persisted in overwhelming the academic point of view—and still does so up to this moment in history. This is nowhere more apparent than in the official reaction to the data and photographs taken on planet Mars by the planet Earth's scientists from their multistage-rocket- despatched *Mariner 9* and *Viking* orbiters:

> But even at the present limits of resolution, some surprising formations have been seen, the most inexplicable of which are *the three-sided pyramids* found on the plateau of Elysium. Scientists have tried to find a natural geological process that would account for the formation of these pyramids, some of which are two *miles across at the base,* but as yet their origin is far from being explained. Such tantalizing mysteries may not be fully solved until astronauts are able to make direct observations on the Martian surface.[1]

(Footnote 1: David L. Chandler, "Life on Mars," Atlantic, June 1977.)

Fig. 986.052

986.052   In 1977 the NASA scientists scrutinized the robot-photographed pictures of the close-in Martian scene and reported the—to them—surprise presence on Mars of two (two-mile-base-edged) three-sided pyramids the size of Mount Fuji. The NASA scientists were unfamiliar with the tetrahedron. They remarked that these forms, with whose simplest, primitive character they were unacquainted, must have been produced by wind- blown sand erosion, whereas we have discovered that tetrahedra are always and only a priori to nature's processes of alteration of her simplest and most primitive polyhedral systems.

986.053   Also suggestive of the same blindness to nature's reality suffered by the academic world and the scientists who lead it, was van't Hoff's late 19th-century identification of the primitive significance of the tetrahedron in the structuring of organic chemistry. (See Sec. 931.60.) His hypothesis was at first scoffed at by scientists. Fortunately, through the use of optical instruments he was able to present visual proof of the tetrahedral configuration of carbon bonds-which experimentally reproduced evidence won him the first Nobel prize awarded a chemist. The Greeks of three millennia ago and today's "educated" society are prone to assume that nature is primitively disorderly and that symmetrical shapes are accomplished only by human contriving.
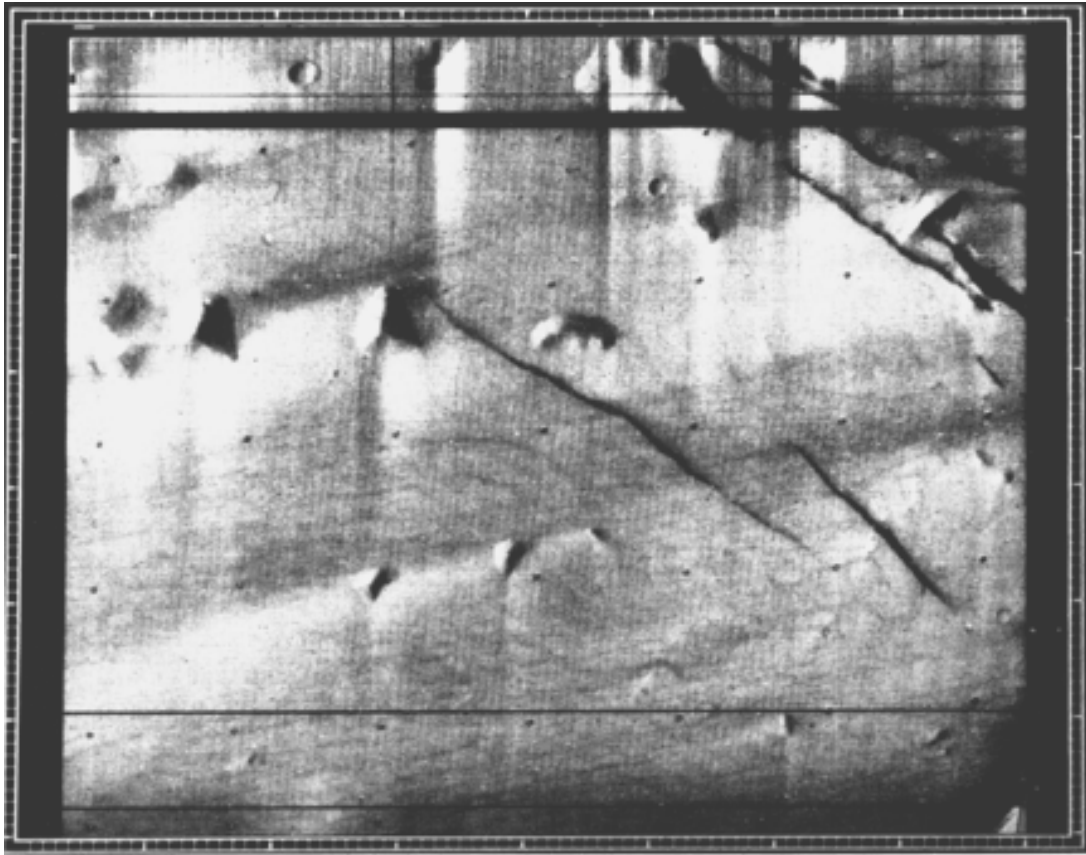
Fig. 986.052 Robot Camera Photograph of Tetrahedra on Mars: On their correct but awkward description of these gigantic polyhedra as "three-sided pyramids" the NASA scientists revealed their unfamiliarity with tetrahedra.