427.00 **Nuclear Computer Design**

427.01 Though I have found an omnidirectional vector equilibrium matrix and the complex of momentarily positively and negatively asymmetrical intertransformabilities pulsating through the equilibrious state, I knew that nature would never allow temporal humans to omniarrest cosmic kinetics at the timeless, i.e., eternal equilibrium zero. But experimenting in cryogenics, taking energy-as-heat out of the insulatingly isolated liquefied gaseous element system approaching absolute zero, we learn that as the temperature gets lower and lower, an increasingly orderly and an increasingly symmetrical, microgeometrical patterning occurs—the Platonic solids appear to become more symmetrically uniform. Contrariwise, when energy-as-heat is progressively reintroduced, the kinetics increase and the complex of conceptual behavior becomes progressively asymmetric. At lowest cryogenic temperatures the omnigrametric interpatterning approaches isotropic vector matrix equilibrium.

427.02 The progressive energy-starving experimental strategy reveals that nature always transforms through, and relative centrally to, the omni-isotropic-vector-matrix equilibrium, while kinetically emphasizing the mildly off-center asymmetric aspects. Nature grows her crystals positively or negatively askew—she twists and spirals around the local, three-way great-circle grid systems in the alternate positive-negative geodesic complementations. Such kinetic considerations of closest packing are significant.

427.03 The isotropic vector matrix equilibrium multiplies omnidirectionally with increasing frequency of concentric, vector-equilibrium-conformed, closest-packed uniradius sphere shells, conceptually disclosing the cosmically prime unique sequence of developed interrelationships and behaviors immediately surrounding a prime nucleus. While the physicist processes his nuclear problems with nonconceptual mathematics, the conceptual isotropic vector matrix equilibria model provides a means of comprehending all the electromagnetic and nonelectromagnetic energy valving and angular shunting controls of the solid state transistors.

427.04 With one layer of spheres around the nuclear sphere we will get one set of angular interrelationships of the surrounding spheres with the nucleus and with one another. With two layers of spheres around the nuclear sphere a different angular relationship between the nuclear sphere and its intersurrounding spheres occurs (see Sec. 415). At the third layer of enclosure some of the angular interrelationship patternings begin to repeat themselves. Thus we are able to in ventory what we are going to call *a nuclear set of unique interrelationship patterns.*

427.05 The isotropic vector matrix multiplies concentrically. But because vectors are discrete, the isotropic vector matrix's lines do not go to infinity. Their length must always represent sum-totally the total energy of eternally regenerative physical Universe. No matter how high the internal frequency of finite Universe, the overall vector equilibrium is of unit magnitude. This magnitude corresponds to that of the speed of radiation uninterfered with in vacuo. We find that the different frequencies in their phases of symmetry identify precisely with what we now call the Magic Numbers identifying the successively reoccurring five peaks in relative abundance of atomic isotopes. (See Sec. 995.)

427.06 1 am confident that I have discovered and developed the conceptual insights governing the complete family of variables involved in realization by humanity of usable access to the ultimate computer . . . ultimate meaning here: the most comprehensive, incisive and swiftest possible information-storing, retrieving, and variably processing facility with the least possible physical involvement and the least possible investment of human initiative and cosmic energization.

427.07 Science evolved the name "solid state" physics when, immediately after World War II, the partial conductors and partial resistors—later termed "transistors"— were discovered. The phenomena were called "solid state" because, without human devising of the electronic circuitry, certain small metallic substances accidentally disclosed electromagnetic pattern-holding, shunting, route-switching, and frequency-valving regularities, assumedly produced by the invisible-to-humans atomic complexes constituting those substances. Further experiment disclosed unique electromagnetic circuitry characteristics of various substances without any conceptual model of the "subvisible apparatus." Ergo, the whole development of the use of these invisible behaviors was conducted as an intelligently resourceful trial-and-error strategy in exploiting invisible and uncharted-by-humans natural behavior within the commonsensically "solid" substances. The addition of the word "state" to the word "solid" implied

"regularities" in an otherwise assumedly random conglomerate. What I have discovered goes incisively and conceptually deeper than the blindfolded assumptions and strategies of solid state physics— whose transistors' solid state regularities seemingly defied discrete conceptuality and scientific generalization and kinetic omnigramming.

427.10 **Invisible Circuitry of Nature**

427.11 We have here the disclosure of a new phase of geometry employing the invisible circuitry of nature. The computer based on such a design could be no bigger than the subvisibly dimensioned domain of a pinhead's glitter, with closures and pulsations which interconnect at the vector equilibrium stage and disconnect at the icosahedron stage in Milky-Way-like remoteness from one another of individual energy stars.

427.12 As we get into cryogenics—taking energy-as-heat out of the system—the geometries become more regular and less asymmetric, thus fortifying the assumptions of synergeticsr because the geometrically "twinkling" asymmetries of kinetics progressively subside and approach, but do not quite attain, absolute cessation at the isotropic vector equilibrium state.

427.13 The atomically furnished isotropic vector matrix can be described as an omnidirectional matrix of "lights," as the four-dimensional counterpart of the two-dimensional light-bulb-matrix of the Broadway-and-Forty-secondStreet, New York City billboards with their fields of powerful little light bulbs at each vertex which are controlled remotely off-and-on in intensity as well as in color. Our four-dimensional, isotropic vector matrix will display all the atom "stars" concentrically matrixed around each isotropic vector equilibrium's nuclear vertex. By "lighting" the atoms of which they consist, humans' innermost guts could be illustrated and illuminated. Automatically turning on all the right lights at the right time, atomically constituted, center-of-being light, "you," with all its organically arranged "body" of lights omnisurrounding "you," could move through space in a multidimensional way just by synchronously activating the same number of lights in the same you-surrounding pattern, with all the four-dimensional optical effect (as with two-dimensional, planar movies), by successively activating each of the lights from one isotropic vector vertex to the next, with small, local "movement" variations of "you" accomplished by special local matrix sequence programmings.

427.14 We could progressively and discretely activate each of the atoms of such a four-dimensional isotropic vector matrix to become "lights," and could move a multidimensional control "form" through the isotropic multidimensional circuitry activating field. The control form could be a "sphere," a "vector equilibrium," or any other system including complex you-and-me, et al. This multidimensional scanning group of points can be programmed multidimensionally on a computer in such a manner that a concentric spherical cluster of four-dimensional "light" points can be progressively "turned on" to comprise a "substance" which seemingly moves from here to there.

427.15 This indeed may be what Universe is doing! Employing a scanner of each of our atoms, this is one way humans could have been radio-transmitted and put aboard Earth from any place in Universe. The naked human eye cannot differentiate visually the separate dots of a matrix when their frequency of uniform-moduled spaced occurrence is greater than one hundred to the linear inch, or ten thousand to the square inch, or one million to the cubic inch. Let us radiantly activate isotropically and modularly grouped local atoms of a human's physical organism in such a manner that only one million per cubic inch out of all the multibillions of actual atoms per cubic inch of which humans consist, are radiationally, ergo visibly, activated. The human, thus omni-internally illumined by the local one-in-one-million atomic "street lamps," could be realistically scanned by discrete "depth-sounding" devices and programmed to move "visibly" through an omnidimensional, highfrequency, isotropic light matrix field "mass."

427.16 Employing as broadcastable channels the 25 great circles of the vector equilibrium all of which pass through all the "*K*" (kissing) points of intertangency of all uniform radius, closest-packed spheres of all isotropic vector matrixes; and employing as local holding patterns the 31 great circles of the icosahedron; and employing as a resonance field all the intertransforming spheres and between-sphere spaces; and employing the myriadly selectable, noninterfering frequencies of such propagatable intertransformation resonance; it is evidenced that the isotropic vector matrixes of various atomic elements may be programmed to receive, store, retrieve, and uniquely constellate to provide computer functioning of unprecedented capacity magnitude within approximately invisible atomic domains. The control mechanism for the operational programming of such microcosmic "computers" will be visible and dextrous and will be keyed by the Mite orientations of the primenumber-one-volumed"Couplers."[5]

(Footnote 5: For an exposition of the behavior of Mites and Couplers see Sec. 953 and 954.

427.17 The ultra micro computer (UMC) employs step-up, step-down, transforming visible controls between the invisible circuitry of the atomic computer complex pinhead- size programmer and the popular outdoor, high-inthe-sky, "billboard" size, human readability.

430.00 **Vector Equilibrium**

430.01 **Definition**

430.011 The geometric form most compactly developed from the closest packing of spheres around one nuclear sphere is not that of a composite sphere, but is always a polyhedron of 14 faces composed of six squares and eight triangles, with 12 vertexes extending in tangential radius from the original 12 spheres surrounding the nucleus sphere. (See illustration 413.01.)

430.02 It is called the vector equilibrium because the radials and the circumferentials are all of the same dimension and the tendencies to both explode and implode are symmetrical. That the explosive and implosive forces are equal is shown by the four- dimensional hexagonal cross sections whose radial and circumferential vectoM balance. The eight triangular faces reveal four opposite pairs of single-bonded tetrahedra in a positive and negative tetrahedral system array with a common central vertex and with coinciding radial edges. The four hexagonal planes that cross each other at the center of the vector-equilibrium system are parallel to the four faces of each of its eight tetrahedra. Six square faces occur where the six half-octahedra converge around the common vector-equilibrium nuclear vertex.

430.03 In terms of vectorial dynamics, the outward radial thrust of the vector equilibrium is exactly balanced by the circumferentially restraining chordal forces: hence the figure is an equilibrium of vectors. All the edges of the figure are of equal length, and this length is always the same as the distance of any of its vertexes from the center of the figure. The lines of force radiating from its center are restrainingly contained by those binding inward arrayed in finite closure circumferentially around its periphery—barrel- hooping. The vector equilibrium is an omnidirectional equilibrium of forces in which the magnitude of its explosive potentials is exactly matched by the strength of its external cohering bonds. If its forces are reversed, the magnitude of its contractive shrinkage is exactly matched by its external compressive archwork's refusal to shrink.

430.04 The vector equilibrium is a truncated cube made by bisecting the edges and truncating the eight corners of the cube to make the four axes of the four planes of the vector equilibrium. The vector equilibrium has been called the "cuboctahedron" or " cubo- octahedron" by crystallographers and geometers of the non-experimentally-informed and non-energy-concerned past. As such, it was one of the original 13 Archimedean "solids."

430.05 The vector equilibrium is the common denominator of the tetrahedron, octahedron, and cube. It is the decimal unit within the octave system. Double its radius for octave expansion.

430.06 The vector equilibrium is a system. It is not a structure. Nor is it a *prime volume*, because it has a nucleus. It is the *prime nucleated system.* The eight tetrahedra and the six half-octahedra into which the vector equilibrium may be vectorially subdivided are the volumes that are relevantly involved.

431.00 **Volume**

431.01 The vector equilibrium consists of six one-half octahedra, each with a volume of two ($6 \times 2 = 12$), and eight tetrahedra each with a volume of one, so $8 + 12 = 20$, which is its exact volume. (See illustration 222.30 222.30.)

431.02 The volume of a series of vector equilibria of progressively higher frequencies is always frequency to the third power times 20, or $20F^3$, where F=frequency. When the vector equilibrium's frequency is one (or radiationally inactive), its volume is $20 \times 1^3 = 20$.

431.03 But *fequency*, as a word key to a functional concept, never relates to the word one because frequency obviously involves some plurality of events. As a one- frequency, ergo sub-frequency, system, the vector equilibrium is really subsize, or a size- independent, conceptual integrity. Therefore, frequency begins with two—where all the radials would have two increments. When the edge module of a cube is one, its volume is one; when the edge module of a cube is two, its volume is eight. But when the edge module of a vector equilibrium is one, its volume is 20. A nuclear system is subsize, subfrequency. Equilibrious unity is 20; its minimum frequency state is $160 = 2^5 \times 5$. This is one of the properties of 60-degree coordination.

431.04 Looking at a two-frequency vector equilibrium (with all the radials and edge units divided into two) and considering it as the domain of a point, we find that it has a volume of 480 A and B Modules. The formula of the third power of the frequency tells us the exact number of quanta in these symmetrical systems, in .terms of quantum accounting and in terms of the A and B Modules (see Chapter 9, Modelability).

432.00 **Powering**

432.01 The vector equilibrium makes it possible to make conceptual models of fourth-, fifth-, and sixth-dimensional omniexpeAence accounting by using tetrahedroning. If we have a volume of 20 around a point, then two to the fourth power (16) plus two to the second power (4) equals 20. We can then accommodate these powerings around a single point.

432.02 Using frequency to the third power with a no-frequency nucleus, the vector equilibrium models all of the first four primes. For instance, the number 48 (in 480) is 16×3. Three is a prime number, and 16 is two to the fourth power: that is 48, and then times 10. Ten embraces the prime numbers five times the number two; so instead of having 16 times 2, we can call it 32, which is two to the fifth power. The whole 480-moduled vector equilibrium consists of the prime number one times two to the fifth power, times three, times five ($1 \times 2^5 \times 3 \times 5$). These are the first four prime numbers.

432.03 Using frequency to the third power with a two-frequency nucleus, we have $2^3 \times 2^5 = 2^8$. If the frequency is two, we have two to the eighth power in the model times three times five ($2^8 \times 3 \times 5$).

432.04 In a three-frequency system, we would have three to the third power times three, which makes three to the fourth power, which we would rewrite as $2^5 \times 3^4 \times 5$. We get two kinds of four-dimensionality in here. There is a prime dimensionality of three to the fourth power (3^4). And there is another kind of four-dimensionality if the frequency is four, which would be written $2^5 \times 3 \times 5$. But since it is frequency to the third power, and since four is two times two (2×2) or two to the second power (2^2), we would add two to make two to the seventh power (2^7), resulting in $2^7 \times 3 \times 5$. If the frequency is five, it would then be two to the fifth power (2^5) times three, because frequency is to the third power times five, which makes five to the fourth power. Quite obviously, multidimensionality beyond three dimensions is experienceably, i.e., conceptually, modelable in synergetics accounting.

433.00 **Outside Layer of Vector Equilibrium**

433.01 The unique and constantly remote but-always-and-only co-occurring geometrical "starry" surroundment "outsideness" of the nucleated vector equilibrium is always an icosahedron, but always occurring only as a single layer of vertexes of the same frequency as that of the nuclear vector equilibrium's outermost vertexial layer.

433.02 There may be multilayer vector equilibria—two-frequency, threefrequency, four-frequency, or whatever frequency. The circumferential vector frequency will always be identical to that of its radial vector frequency contraction of the vector equilibrium's outer layer of unit radius spheres by local surface rotation of that outer layer's six square arrays of non-closest-singlelayer packing of tangent spheres inter-rearranging into closest triangular packing as in the vector equilibrium's eight triangular facets, thus transforming the total outer layer into the icosahedron of equal outer edge length to that of the vector equilibrium, but of lesser interior radius than the vector equilibrium of the same outer edge length, and therefore of lesser interior volume than that of the vector equilibrium, ergo unable to accommodate the same number of interiorally-closest-packed, nuclear-sphere- centered unit radius spheres as that of the vector equilibrium. The icosahedron's multifrequenced outer layer surface arrays of unit radius, closest-planar-packed spheres cannot accommodate either concentric layers of unit radius closest-packed spheres nor— even at zero frequency—can the icosahedron's 12-ball, omni-intertangentially triangulated outer shell accommodate one nuclear sphere of the same radius as that of its shell spheres. Icosahedral outer shell arrays of identical frequency to that of the vector equilibria

of the same frequency, can therefore only occur as single-layer, symmetrical, enclosure arrays whose individual spheres cannot be tangent to one another but must be remotely equipositioned from one another, thus to form an omni-intertriangulated, icosahedrally conformed starry array, remotely and omnisurroundingly occupying the vector equilibrium's sky at an omnistar orbit-permitting equidistance remoteness around the vector equilibrium whose outer shell number of spheres exactly corresponds to the number of the icosahedron's "stars." This geometrical dynamically interpositioning integrity of relationship strongly suggests the plurality of unique electron shell behaviors of all the chemical elements' atoms, and the identical number relationships of the atoms' outer layer protons and its electrons; and the correspondence of the vector equilibrium's number of concentric closest-packed, nucleus-enclosing layers with the number of quantumjump- spaced electron orbit shells; and finally the relative volume relationship of equi-edged vector equilibria and icosahedra, which is, respectively, as 20 is to 18.51, which suggests the relative masses of the proton and the electron, which is as 1:1/1836.

Next Section: 440.00
