1050.10   **Synergy of Synergies:** We have the concept of synergy of synergies. Precession is not predicted by mass attraction. Chemical compounds are not prophesied by the atoms. Biological protoplasm is not predicted by the chemical compounds. The design of the elephant or the tree and their unwitting essential respiratory-gas conversion interexchanging is not predicted by the protoplasm. There is nothing about an elephant that predicts islanded star galaxies. As we get into larger and larger systems, the total system is never predicted by its lesser system's components.

1050.11   We know that there is DNA and RNA, any one genetic code of which dictates both a species and within it an individual or special-case formulation. DNA-RNA codes do not explain *why* the protoplasm could produce either an elephant, pine tree, or daisy. They elucidate only *how.* What we call *viral steerability* as produced by the DNA- RNA codes is simply our familiar and generalized *angle-frequency design control.*

1050.12   DNA-RNA angle- and frequency-modulated designs are composed exclusively of four unique chemical constituents that operate as guanine and cytosine; and as thymine and adenine: inseparable but reversible tandem pairs. The first pair occur as GC or CG. The second pair occur as TA or AT. The DNA-RNA codes may be read in any sequence of those constituents, for instance, as CG - CG - CG - GC - TA - AT - GC - TA - TA - TA - AT CG - CG - GC, etc. (See Sec. 932.)

1050.13   We know the codes, but we do not know the "how come" of their producing an elephant. The complementarity of the holisticness of these special-case individuals balances out. An elephant does walk. Elephants are successful designs. We have no evidence of biological species that are inherently incomplete designs. In the hierarchy of hierarchies of synergies, Universe is the unpredicted behavior of any of its sublevel synergetics. We must start our synergetic analysis at the level of Universe and thereafter with [he known behavior of the greatest whole and the known behavior of some of its parts, then proceed as permitted mathematically to discover its unknown parts. We have the Greek triangle with its known 180 degrees of angle; which together with the knowledge of the magnitude of any two sides and their included angle, or of any two angles and their included side, etc., permit us to discover the magnitude of the balance of the triangle's six

parts. Or, using trigonometry, if we know the magnitude of any two parts, we can ferret out the others.

1050.20 **Trigonometry:** The way we were taught in school about fractions leads to inconsistency. We were taught that fractions can be multiplied, divided, added, and subtracted only when the fractions consisted of identical entities. We could not divide three elephants by four oranges. However, trigonometry introduced functions—which are fractions or ratios, e.g., the sine, cosine, tangent, cotangent, and so forth. Contradicting our earlier lessons about fractions, these trigonometric fractions do mix together angles and edges of spherical triangles. This inconsistency could have been avoided by starting our geometry with spherical trigonometry. We would recognize that what we call a great circle arc or "edge" is indeed a central angle of the sphere. We would learn that we have central and external angles. We would spontaneously see that plane geometry derived from solid geometry and is an oversimplification of localized and superficial aspects of systems. This brings us back to angle and frequency modulation, i.e., outward, inward, and circumferentially around, complementary angle and frequency oscillations and pulsations and the congruence of the linear and angular frequency modulations. By teaching children plane geometry before teaching them spherical trigonometry, society became harnessed with a mathematical contradiction wherein trigonometry deliberately ratioed edge *lines* with *angles*—which clearly seemed to be forbidden by arithmetical fractions' law. Single lines are seemingly very different from angles, because angles involve *two* (convergent) *lines.* If, however, instead of starting elementary education with unrealistic, linear, one-dimensional arithmetic; and then going on to two-dimensional plane geometry; and thence to three-dimensional cubes; and thence to spherical trigonometry ... if we instead start synergetically with whole systems such as spherical trigonometry, we altogether avoid the concept of an edge and instead learn that the arc-defined edges of spherical triangles are the central angles of the sphere; wherefore both the arc edges and corners are angles, ergo ratioable. Now, having both surface *angles* and central *angles,* we discover that spherical trigonometry is always dealing with whole tetrahedra whose interior apexes are always at the center of the spherical system; and three of whose triangular faces are the great-circle plane triangles hidden within the spheric system; and whose fourth triangular face is always the arc-chord surface triangle of the sphere. These central- and surface-angle understandings are fundamental to transformational thinking, which deals with the falling-inward and precessing-outward proclivities.

1050.30   Simplest Trigonometric Solutions: Sequence to Accompany Poster in color plate 1.

1050.31   Stones may be broken into ever smaller stones, but they cannot be broken into no stones. They may be broken into gravel and the gravel into dust and the dust separated into crystals that are too small to be seen except through a lensed microscope; or they may be further broken apart into atoms that can be seen only through electron field microscopes. But the stones cannot be broken into nothingnesses—only into somethings. And somethings are always systems.[7]

(Footnote 7: The energy of the blow that breaks them asunder entropically releases the energy that previously bound together the atoms of the separate somethings. Disassociative energy is radiant—entropic; associative energy is something-forming—syntropic.)

1050.32   As the stones break, they have cleavage faces. They break into irregular polyhedra that are complex or simplex geometrically definable systems, each of which always has an inherent insideness and outsideness. The number of faces—hedra—of polyhedra cannot be reduced to less than four: the tetrahedron. The number of sides— gons—of a polygon cannot be reduced to less than three: the triangle. The minimum polyhedron of Universe is the tetrahedron, which requires a minimum of three triangles surrounding each of its four corners, whose four corners are omniinterconnected with a minimum of six edges that discretely outline the four triangular (minimum polygon) faces.

1050.33   Make the "V for Victory" sign with two adjacent fingers. The V is visual. The V is a specifically visible angle. The angle is an angle independent of the length of the fingers—that is, independent of the length of the sides of the angle. Angles, triangles, and tetrahedra are conceptual pattern integrities independent of size. Angles are always and only fractional parts of whole circles (of 360 degrees). Likewise, triangles are always and only components of a priori whole physical polyhedral systems (or of a plurality of whole polyhedral systems) each of 720 degrees (or whole multiples of 720 degrees) of angles surrounding all the external vertexes describing those systems. Only triangles produce structural stability. Only triangles produce pattern stability. The omnitriangulated tetrahedron is the minimum structural system of Universe.

1050.34   Drawing or scribing are physical operations executed upon a physical system. Triangles can be drawn or scribed or traced or trajectoried only upon or within an a priori physical system, or defined by a constellation of three physical systems within a greater a priori system.

1050.35   There are six and only six different but always orderly intercovarying geometrical characteristics or integral parts of all triangles: three surface-angle corners A, B, and C, and three sides a, b, and c. In reality these sides are always the central angles of the scribed-upon system and they are only evidenced by their surface-arc lines.

1050.36   Individual angular values or the relative interrelationships or interratios or functions of these parts hold true independent of the size of the triangle. This is to say that an equiangular triangle is equiangular and humanly conceptual independent of the size of any of our special case triangular experiences. The four most useful of these functions and their symbols are:

$$\text{sine} = sin \qquad \text{tangent} = tan$$

$$\text{cosine} = cos \qquad \text{cotangent} = cot$$

1050.37   The science that measures the respective angle magnitudes of the six ever- orderly intercovarying angles of triangles is called *trigonometry.* All of the geometrical interrelationships of all triangles—spherical or planar—are discoveringly calculated by the same trigonometry because plane triangles are always very small spherical triangles on very large spheric systems such as high-frequency symmetric polyhedra. A circle is a spherical triangle each of whose three corner angles is 180 degrees.

1050.38   To find the value of all the central angles (sides) and surface (corner) angles of any spherical triangle, we can always start by dropping a perpendicular from any vertex of that triangle upon its opposite side—making it into two "right" triangles. In order to discover all six angular values of a given triangle it is necessary to know—in addition to knowing the 90-degree corner—the surface- or central-angular values *of any other two* of the to-be-solved triangle's five other parts: A, B, a, b, c. Many mathematicians have devised strategic formulas for coping with trigonometric solutions, most of them involving plus or minus quadrant symbols that invite errors of calculation.

1050.39   To make the trigonometry of the sea captain's celestial navigation as simple and foolproof as possible the mathematician Lord Napier (1550 1667)[8] evolved the following diagrams and procedures. To avoid what is known in navigation as "the 180- degree error"—going in exactly the opposite direction from that which will get you where you want to go—Napier arranged the five non-90-degree "parts" of a triangle in a five- segment "clock."

(Footnote 8: Napier was the first to use the decimal point; he also invented logarithms for numbers. His mathematical ingenuity contributed greatly to the attainment of world ocean supremacy by the East India Company and the Royal Navy.)

1050.40   Napier had two equally simple ways to solve trigonometric problems without plus or minus symbols, provided that any two of the non-90-degree angles are known at the outset. His superscript ^{c} means that A^c, c^c, B^c are the 180-degree complements of A, c, B. For instance, $A^c + A = 180°$, wherefore *sin A^c = cos A; or tan c^c = cot c, etc.*

1050.41   First we check-mark the two "known-in-advance" non-90-degree parts on Napier's five-segment clocklike pattern. It is clear that the two already-knowns are always either divided from one another or are side by side. In Napier's Case One the two knowns are side by side in the clock: Napier calls this the case of *Opposites.* Opposite Case see Rule 1 chosen unknown for first solution.

1050.42   In Case Two the two knowns are separated from one another in the clock: Napier calls this the case of *Adjacents.* Adjacent Case see Rule 2 first unknown to be solved.

1050.43   Napier's two easily remembered rules are:

Rule 1. The sine of any unknown part *theta* is equal to the product of the cosines of the two known *opposite* parts. This is written as:
unknown's angle *theta's sin = cos · cos* of its two known *opposite parts.*

Rule 2. The sine of any unknown part is equal to the product of the tangents of its two known *adjacent* parts. This is written as:
unknown angle *theta's sin = tan · tan* of its two known *adjacent* parts.

1050.44   Next we employ the appropriate formula with the known cosine or tangent values. Next we must remove the superscript ^{c} of the complementaries, if any, by substituting cosines for sines, sines for cosines, tangents for cotangents, and cotangents for tangents.

Example: When the equation as first written is

$$\sin b = \cos c^c \cdot \cos b^c$$

the equation must be rewritten

$$\sin b = \sin c \cdot \sin b;$$

or if the equation first reads

$$\sin A^c = \tan c \cdot \tan b,$$

it must be rewritten as

$$\cos A = \cot c \cdot \tan b$$

before going on to intermultiply the functions of the two knowns whose product will be the function value of the previously unknown angle theta. The angle values of the newly found knowns may be in any table of trigonometric functions or may be "remembered" by computers. When the value is found for an angle's function (sin, cos, tan, cot), its specific angular value may also be read out of the tables.

1051.00   **Circumference and Leverage**

1051.10   **Complementarity of Circumferential Oscillations and Inward and Outward Pulsations:** We have demonstrated circumferential complementarity, the circumferential twoness of systems such as the northern and southern hemispheres of our Earth. There is also concave inward and convex outward complementarity, inward and outward twoness. As a consequence, there are also circumferential skew oscillations *and* inward and outward pulsations.

1051.20   **Central and External Angles of Systems:** The tetrahedral integrity of internal (central) angles and external (surface) angles of systems permits the integration of the topological and quantum hierarchies. It is exciting that the three internal radii give us three edges of the tetrahedron's six edges; while the arc chords give us the three other of the tetrahedron's six relationships; and the center of the spheric system and the surface triangle's three corner-vertexes give us the four-vertex-events having the inherent six system relationships; which six are our coincidentally six-positive, six-negative, equieconomical vectorial freedoms (see Sec. 537.10). The central angles gives us what we call the chords of the central-angle arcs. Thus all-system-embracing geodesic lines are expressible in angular fractions of whole circles or cycles.

1051.30   **The Circumferential Field:** The inward-outward complementations of the system are represented by great-circle arcs on the system's surface, whose existence is in reality that of the central angles of the system which subtend those external arcs and create the arc cyclic-duration "lengths." Areal definition of the circumferential—ergo, surface— complementations and their oscillations occur as the surface angles at the vertexes of the system's external mapping.

1051.40   **Angular Functionings of Radiation and Gravity:** The differences between the central angles' and surface angles' functionings are identifiable with radiational and gravitational functionings. Radiation identifies with central angles. Radiation is outwardly divergent. Gravity identifies with the three surface angles' convergent closure into the surface triangle's finite perimeter. Gravity is omniembracing and is not focusable. Gravity is Universe-conservingly effective in its circumferential coherence.

1051.50   **Leverage:** The principle of leverage is employed in shears, nutcrackers, and pliers. The longer the lever arms, the more powerful the pressure applied between the internal central angles of the nutcracker's lever arms. We can make an illuminating model of our planet Earth if we think of it as a spherical bundle of nutcrackers with all their fulcrums at the center of the sphere and all the radii of the sphere acting as the lever arms of the pincers. The whole bunch of pincers have a common universal fulcrum at the common center. The farther out we go on the radial lever arms, the less effort is required to squeeze the ends together to exert nutcracking pressure at the center. If we go around the sphere-embracing circumference progressively tying up the ends of the levers together, we find that it takes very little, local, surface effort tensively between any two surface points to build up excruciatingly powerful, central-compression conditions. The bigger the model, the easier it is to tie it up; ever more delicate an exterior web will hold it

together.

1051.51   Look at the relative distance of the atom and its outside electron orbit. The atom's electron field may be equivalent to our magnetic field around this Earth. This elucidates the electromagnetic field of Earth as a world-around, circumferential- embracement field operating ephemerally on the outer ends of 4,000-mile-long levers.

1051.52   Identifying the surface-angle chordings with gravity, we comprehend why it is that as we get deeper and deeper within our Earth, with the pressure continually increasing as we get deeper, we see that the increasing gravitational-compression effect is due to the circumferential containment. The external containment web is always getting hold of the outermost ends of the centrally pinching levers. With this leverage effect, the farther out you go, the more advantage you have and the more powerful work you can do with that lever. Leverage effectiveness increases toward the center, ergo the increasing pressure that we identify with gravity. But it has this circumferential aspect.

1051.53   There is a tendency to misinterpret the increasing pressures occurring inwardly of Earth as "deadweight," i.e., only as a radiationally-inward force, but it must be realized that the "weight" is omnidirectional compression. The gravitational intermass- attraction is progressively augmented, as we go radially outward, by the circumferential mass-interattraction of the relative abundance of elemental atoms, which increases at the second-power rate of the radial-distance outwardly from the Earth's center; and as the pressures bring about ever closer presence of the atoms to one another, there is also an additional second-power exponential gain which results in r^2 varying as $proximity^2 = P^4$, where P = relative compressive force. The surface chordal-angle magnitudes multiplied by radius to the second power produce the relative magnitude of network leverage-advantage resulting in the relative increase in pressure as you go inward toward Earth's center. This is exciting because we now comprehend that gravity is a circumferentially operative force and not a radial force, with precession bringing about the 90-degreeness.

1051.54   Remembering Newton's law of gravity, wherein the relative interattractions are directly proportional to the product of the masses increased by the second power of the distances between the respective mass centers, we realize that doubling the size of a sphere brings about an eightfold multiplication of the circumferential mass-interattraction. In effect, we have a network of chordal cables tensively intertriangulating the progressively outmost ends of the spherical nutcracker bundle with circumferential turnbuckles continually tightening the surface-triangulated tensional embracement network. This means that the pressures being exerted internally are proportional to the fourth power of the relative radial depth inward of Earth's surface.

1051.55   The surface-embracement leverage-advantage of the sphere operating at the fourth power can always overmatch the total volumetric gaining rate as only the third power of radial (frequency), linear gain, as the second-power interproximity attractiveness is further multiplied by the second-power, radial-lever-arm, advantage gains.

1052.00   **Universal Integrity**

1052.10   **Second-Power Congruence of Gravitational and Radiational Constants:** The relative mass-energy content magnitude of a polyhedral system is arrived at by multiplying the primitive, frequency-zero, a-priori-state volume (relative to the tetrahedron-equals-one) of the geometric, concentric, structural system's hierarchy, by the second power of the (both minimum and maximum) limit linear velocity of all classes of radiation when unfettered in a vacuum; i.e., multiplying initial volume by the terminal rate at which a spherical wave's outermost, unique-event-distinguishability progressively and omniexpansively occurs, as expressed in terms of the second power of relative frequency of modular subdivision of its initially-occurring, polyhedral system's radius; ergo as manifest in Einstein's equation $E = Mc^2$. Energy equals a given mass with its relative mass-energy compactedness tighteningly modified by the velocity of energy-as-radiation intertransformability potential (not just linearly, but omnidirectionally); ergo as a potentially ever-expansively enlarging spherical wave's outermost-event, one-radial- wavelength-deep surface; ergo second power of system frequency (because wave surfaces grow omni-outwardly as of the second power of the radial, linear frequency) rate of gain. (See Secs. 231.01, 251.05, 529.03 and 541.)

1052.20   **Spherical Field:** As already discovered (see Sec. 964), physics' discovery of universally-multifrequenced, periodic-event-discontinuity *outness* (in complementation to equally frequenced, event-occurrence *in-ness*) is inherent in the always-experientially- verifiable, wave-duration frequency, photon-quantum phenomena; wherefore synergetics had to redefine both volumes and surfaces in terms of *dense* (high-frequency) aggregates of only pointally-positionable, energy events' geometrical formulations, with spherical "surfaces" being in operational reality a dense, outermost, single-photon-thick, "cloud" layer, everywhere approximately equidistant in all directions from one approximately- locatable event center. For this reason the second-power exponential rate of area gain is not to be identified with a continuum, i.e., with a continuous system, but only with the high-frequency outermost layer population aggregate of energy-event points. With numbers of photons and wave frequency per primitive volume, the relative concentration of given masses are determinable.

1052.21   Isaac Newton discovered the celestial gravitation interrelationship and expressed it in terms of the second power of the relative distance between the different masses as determined by reference to the radius of one of the interattracted masses. The gravitational relationship is also synergetically statable in terms of the second power of relative frequency of volumetric quanta concentrations of the respectively interattracted masses. Newton's gravitational constant is a radially (frequency) measured rate of spherical surface contraction, while Einstein's radiational constant is a radial (frequency) rate of spherical expansion. (See Secs. 960.12, 1009.31 and 1052.44.)

1052.30   **Gravitational Constant: Excess of One Great Circle over Edge Vectors in Vector Equilibrium and Icosahedron:** Pondering on Einstein's last problem of the Unified Field Theory, in which he sought to identify and explain the mathematical differentiations between electromagnetics and gravity—the two prime attractive forces of Universe—and recalling in that connection the conclusion of synergetics that gravity operates in spherical embracement, not by direct radial vectors, and recalling that electromagnetics follows the high-tension convex surfaces, possibly the great-circle trunk system of railroad tracks (see Secs. 452 and 458); led to pondering, in surprise, over the fact that the vector equilibrium, which identifies the gravitational behaviors, discloses 25 great circles for the vector equilibrium in respect to its 24 external vector edges, and the icosahedron, which identifies the electron behaviors of electromagnetics, discloses 31 great circles in respect to its 30 external vector edges.

1052.31   In each case, there is an excess of one great circle over the edge vectors. Recalling that the vector edges of the vector equilibrium exactly equal the radial explosive forces, while the icosahedron's 30 external edges are longer and more powerful than its 30 radial vectors, yet each has an excess of one great circle, which great circles must have two polar axes of spin, we encounter once more the *excess two* polar vertexes characterizing all topological systems, and witness the excess of embracingly cohering forces in contradistinction to the explosively disintegrative forces of Universe.

1052.32   **Possibility of Rational Prime Numbers in High-energy Physics Experiments:** In recent years the experiments of the physicists, notably at the European Nuclear Research Center (CERN), seem to provide increasing confirmation of the similarities in the behaviors of electromagnetic and gravitational forces—as well as in the bonding and radioactive effects of the atomic nucleus (see Sec. 646.10). The ultimate definition of a Unified Field Theory becomes tantalizingly nearer at hand. The results and findings of the physicists' experiments should be examined in the light of synergetics' models, especially the vector equilibrium, and the comprehensive isotropicity which derives from closest-sphere-packing and provides omnirational accounting for radial and circumferential coordination. This kind of examination might account for some of the energetic behaviors of the newly described mass particles—leptons and hadrons, quarks and antiquarks—in which the second-power of their masses displays simple whole-number relationships.

1052.33   In synergetics the number of spheres on the outer surface of symmetrically complete VE aggregations is equal to two plus two times frequency to the second power times five—the prime number that is the key to the respective masses of both the VE and Icosa. The equation of prime number inherency of symmetrical structural systems ($2NF^2 + 2$; see Sec. 223.03) could be considered as describing a Unified Field Theory in which the number of vertexes (crossings or events) can be regarded as abstractions from the total field corresponding to a scenario of limited conceptuality. (Compare Secs. 419.10-20.)

1052.350   **Microsystems**

1052.351   A point is always a microsystem or a plurality of microsystems—ergo, at minimum one tetrahedron.

1052.352   A line is a relationship between any two microsystems.

1052.353   A tetrahedron is defined topologically by four conceptually locatable microsystems interconnected by six interrelationship lines whose 12 ends are oriented to corner-converge in four groups of three lines each; these lines terminate in one of four infratunable microsystem corners, whose at-minimum-of-three-other corner-defining microsystems lie outside in the tune-in-able tetrahedron defined by the six lines. (See Sec. 505.83.)

1052.354   The tetrahedron is the minimum *tunable* system. A point-to-ability is a tuned-in tetra. Each tuned-in tetra consists of four corners, each of which is an infratunable tetrasystem.

1052.355   The threeness of the quarks shows up at the three minimum convergent lines around each vertex of the minimum system consisting of only six lines.

1052.356   Topological components of systems and their infra-tune-in-able corner-vertex-locating infratunable systems ad infinitum do not and cannot exist independent of systems.

1052.357   The above describes the tunability of corners and is explanatory of the ever- reappearing quarks that disclose the primitive characteristics of all systems, which always—to any one human observer listening at any one tuning-in time—consist of infra- or ultratunable systems ad infinitum.

1052.360   **Mite as Model for Quark**

1052.361   Proofs must proceed from the minimum whole system to Universe and the differentiation-out of Universe of the special case conceptual system. Proofs must start from the minimum something that is the minimum structural system. All geometrical and numerical values derive from fractionation of the whole.

1052.362   At the maximum limit of the rational cosmic hierarchy of primitive structural systems we have the 120 similar and symmetrical T Quanta Module tetrahedra that agglomerate symmetrically to form the triacontahedron. (See Sec. 986.) At the minimum limit of the hierarchy are the separate A, B, and T Quanta Modules, and at the minimum limit of allspace-filling— ergo, of all Universe structuring—we have the three-module mites consisting each of two A and one B Modules.

1052.363   The mites are the quarks. The two energy-holding A Quanta Modules and the one energy-dispersing B Quanta Module of which the mite is composited exactly correspond with the plus-two, minus-one characteristics model of the three-separate-entity functions of the quark. (See Secs. 262.04 and 262.05.)

1052.40   **Vector Equilibrium and Icosahedron: Ratio of Gravitational and Electromagnetic Constants:** The vector equilibrium and the icosahedron are the same initial twentyness. But the icosahedron is always in either a positive limit or a negative limit phase of its, only-pulsatingly attained, first-degree structural self-stabilization in the asymmetric transformation of the vector equilibrium, which alternating pulsations are propagated by the eternally opposed, radiant-attractive, always dualistic, inter-self- transformable potential of ideally conceptual unity of Universe.

1052.41   The icosahedral phase of self-structuring is identifiable uniquely with the electron, whose mass relationship to the proton is as 1:18.51, whereas the icosahedron's volume is to the vector equilibrium's volume as 20:18.51. In this connection it is significant that the vector equilibrium's plural unity is 20, ergo we may say the relationship is as unity: 18.51.

1052.42   The number of icosahedral electrons is always equal to the number of protons that are in the vector equilibrium's idealized form of the same surface layer phenomenon.

1052.43   The nonnucleated icosahedron can and does maintain only one single, one- wave-deep, external layer of omnicircumferentially, omni-intertriangularly tangent, closest-packed, unit-radius, spherically conformed, energy-event packages; while the vector equilibrium is both radially and omnicircumferentially, omnitriangularly closest packed, i.e., in maximum, intertangential, mass-interattractiveness nucleated concentration.

1052.44   Reminiscent of electron proclivities, the icosahedron displays the same surface number of spherically conformed, energy-event packages and its only-one-wavelength-deep, single, outer sphere layer array is omnitriangulated, while the vector equilibrium's surface is arrayed two-fifths in triangulation and three-fifths in open, unstable, square tangency. As spherical agglomerates decrease in radius—as do the vector equilibria's contract to the icosahedral phase—their sphere centers approach one another, and Newton's mass-interattraction law, which shows a second-power gain as the interproximities are halved, imposes an intercoherence condition whereby as their overall system radius decreases, their circumferential mass-interattractions increase exponentially as r^2, where r = radius of the system. (See Sec. 1052.21.)

1052.50   Syntropy and Entropy

[1052.50-1052.71 Physical Periodicities Scenario]

1052.51   **Meshing and Nonmeshing:** We know from the scientifically proven knowledge derived from physical experiments that local physical systems are continually losing energy, though they may be concurrently importing or inhibiting energies. This constant energy loss is the dominant characteristic of entropy. Due to each of the local Universe system's unique complex of chemical-element periodicities the energies that are given off in an orderly manner appear to be disorderly harmonics in respect to the unique harmonic complexes released by other systems. The timings between different energies leaving different systems, like any two different-sized mechanical gears, may not necessarily mesh or synchronize with the timings of energies leaving other systems that they encounter, which encountered energy events also may be separately orderly in themselves.

1052.52   The special-case regenerative system itself may attain maximum orderliness while being acted upon by externally distributive forces. Often the reason that systems do not synchronize is that they derive from different complexes of chemical elements. Since every one of the interorbiting cosmic system's elements has its unique frequencies, the wave frequencies of the orbiting systems are like the peaks and valleys of gear teeth whose peak-and-valley perimeters have latch-key-like irregularities. We have gears that rarely interlock and must consequently remain only superficially tangent to one another. Hence they take up more room than they would if they had meshed. The centers of the two meshing gears are nearer to one another than are the centers of the same two gears when their teethed perimeters are not meshed. When meshed, they are more powerfully intermass-attracted than when nonmeshed. (See Secs. 263.02 and 522.36.)

1052.53   Gears of equal weight and of the same material might have very many little teeth or relatively few big teeth in each of their great-circle cycles. The frequencies being given off entropically do not expand in planes or lines; they expand omnidirectionally as a complex of differently timed radial spirals. As the omnispheric gears fail to mesh, they employ ever more space, and therefore we realize a physically entropic Universe that is everywhere locally broadcasting its disorderly information to our sensorial receptors. Thus it seems—to short-term, local observation—that the aggregate discards of entropically released energies of the various localities of the physical Universe are expanding and even further expending energies in an increasingly disorderly manner. The syntropic births and growths escape our attention, for they inherently withhold or withdraw information regarding their ultimately syntropic cosmic resolution of apparent disorders—a resolution withheld from Earthian observers who are preoccupied with hindsight and dismayed by the obvious only-initially-entropic disorders. But fundamental complementarity requires that there be other localities and phases of Universe wherein the Universe is reconvening, collecting, and condensively contracting in an increasingly orderly manner as complementary regenerative conservation phases of Universe thus manifesting comprehensive transitions from disorder to order, from entropy to syntropy.

1052.54   **Order and Disorder:** Birth and Growth: Entropy is locally increasing disorder; syntropy is locally increasing order. Order is obviously the complement, but not mirror-image, of disorder.[9] Local environments are forever complexedly altering themselves due to the myriad associative and disassociative interpatterning options of syntropy and entropy, with an overall cosmic syntropic dominance insured by an overall local entropic dominance. (See the "Principle of Universal Integrity" at Sec. 231.) Universe is a vast variety of frequency rates of eternally regenerative, explosive, entropic vs implosive, syntropic pulsation systems. Electromagnetic radiant energy is entropic; gravitational energy is syntropic.

(Footnote 9: See "Principle of Irreversibility" at 229.10)

1052.55   Both entropy and syntropy are operative in respect to planet Earth's biospheric evolution. Wherever entropy is gaining over syntropy, death prevails; wherever syntropy is gaining over entropy, life prevails.

1052.56   Entropy is decadent, putrid, repulsive, disassociative, explosive, dispersive, maximally disordering, and ultimately expansive. Syntropy is impulsive, associative, implosive, collective, maximally ordering, and ultimately compactive. Entropy and syntropy intertransform pulsively like the single rubber glove (see Sec. 507). There is an entropic, self-negating, momentary self: there is also the no-time, nondimensionable eternity of mind. Dimensioning is apprehensible only within temporal relativity. Time is experienced in our relative duration lags and gestation rates as well as in the unique frequency interrelatedness of the electromagnetic spectrum events and novents. Every time we experience the novent disconnects of momentary annihilation into eternity, naught is lost. Mind deals only with eternity—with eternal principles. What is gained to offset any loss is the residual, observational lags in accuracy inherent and operative as cognition and the relativity of awareness that we call life. (See Secs. 638.02 and 1056.20.)

1052.57   The life-propagating syntropy-entropy, birth-to-death transformations constitute the special case realizations of the complex interactive potentials of all the eternal, abstract, dimensionless, nonsubstantial, generalized principles of Universe, interplayed with the absolute "if-this-then-that" integrity of plural cosmic unity's intercomplementarity. The death and annihilation discontinuities occur as eternal generalization intervenes between the special case, "in-time," relative intersizing of the realizations.

1052.58 **Pattern Sorting and Observing:** When we are able to observe for long enough periods of time, however, we find all the gears of Universe eventually meshing, though not simultaneously. The next periodic meshing of any two of the gears might take a thousand years—or 28 l/2 years—or 17 seconds. The important phenomenon to note is that there are great varieties of periods of nonmeshing which altogether make the physically observed totality appear to take up ever more room, and anywhere within this expansiveness the locally predominant events occurring within short spans of time appear to be omnidisorderly. When we compound that realization with the now-known millionfold greater span of electromagnetic reality and the lesser span of direct-sense ranging of the human organism, we begin to comprehend how readily humanity falls into the trap of dismay, fear, and negativism in general. Impatience engenders further myopically disorderly incrementation of information receipts. Those who are impatient for the receipt of the next news broadcasts are only beguiled by negative information. That is what myopia looks for. Chronic shortsightedness spontaneously seeks and tunes in only the broadcast entropy. Syntropy incasts, in contradistinction to entropic broadcast. Syntropy can be apprehended only through *overall* or comprehensive review of the totally recalled information of long-term experience.

1052.59 Man has no experimental data to suggest that energy is ever created or destroyed. Though our own overall experience leads us to the discovery of cyclic events that return upon themselves, the local, momentary, physical events seem to be giving off energy and taking up more room despite our own syntropic attempts to reestablish local order. Entropy is defined as the law of increase of the random element. But our experience in physical exploration also reveals to us that every pattern phenomenon has its complementary which is rarely a mirror-image and is most frequently invisible. As the complementary has the effect of cosmic integrity balancing, we realize there must be unseen syntropic events of Universe that are always reordering the environment. Syntropy is the law of elsewhere-importing and always-orderly regrouping of the entropic exportings of all dying systems. Aging and death here engender birth and growth elsewhere. (See Sec. 1005.611.)

Next Section: 1052.60