781.00 **Accommodation of Aberration**

781.01 We can take hold of any two parts of a tensegrity sphere and treat it as an omnidirectional, expansion-contraction accordion. In the same way, we can take hold of any two parts of a rubber-vectored, isotropic-vector matrix and, so long as the contiguous faces of the octahedron-tetrahedron field remain congruent, the matrix can be distorted by angular variation, spin, orbit, inside-outing, expansion, knotting, or torque without losing any of all the fundamental regularities of the omniconsidered, allspace-filling set.

781.02 Activated by tension and compression, two remote-from-one-another external triangles of an elongated isotropic rubber-vectored matrix structural system may be congruently associated to close the system's "insideness" back upon itself to form a large, flexible structural-system ring with a circularly closed insideness, like a serpent biting off its own tail and swallowing the "open" end.

781.03 In order to be a system definitively ergo, topologically accommodated throughout all transformative transactions of dividing the insideness from the outsideness—and to be structural, the system-dividing medium must be omnitriangulated—ergo, having only triangular openings.

781.04 When the structural system's remote structural parts are joined back on themselves to continue the insideness-integrity's division from the outsideness, the only "holes" in the system (which may be coupled to join the insideness back on itself) are triangular wholes, with their respective three corners identifiable as A, B, C, and A', B', C', respectively. They could be nontwistingly joined A to A`, B to B`, C to C`, or by twisting the elongated rubber-vectored system's ends 120 degrees, they could be joined as A to B`, B to C`, C to A`, or twisted more to A to C`, B to A`, C to B'—or they could be twisted 360 degrees and fastened A to A', B to B', and C to C'—or several such always 120-degree-incremented twists and multiples thereof could occur.

782.00 **Distortion of Vector-Equilibrium Frame**

782.10 **Accommodation of Aberration: Corollary:** An allspace-filling isotropic complex consisting entirely of triple-bonded tetrahedra and octahedra can become nonisotropically distorted yet remain allspace filling, i.e., all six or several edges of the tetrahedron and the correspondingly bonded edges of the octahedra can become coordinatedly dissimilar and yet be allspace filling.

782.11 Throughout the distortions and aberrations of the octahedron-tetrahedron field, the ratio of the octahedral volume as fourfold the tetrahedral volume remains constant.

782.12 The whole synergetic hierarchy of rationally related A and B Quanta Modules and topological values remains constant.

782.20 **Regularities:** Such potential distortion of the vector-equilibrium frame of reference introduces an almost infinite variety of nuclear sphere's connect-and-disconnect conditions without in any way altering any of the other topological regularities discussed throughout synergetics.

782.21 Infinite variety of local, individual initiations and terminations within eternal cosmic integrity of total order is implicit.

782.22 Regularity is total.
Variability is local.

782.23 Finite—and the concept *finite's* only-speculatively-inferred impossible condition of conditionless "infinite"—identify only special-case physical experience, ergo, are experientially always finitely terminal. Frequency is of time and is finitely terminated.

782.30 **Variability of Spherical Magnitudes:** All or partial differentialing of the six always-congruent tetrahedron and octahedron edges of allspace filling also introduces variation in the size of the spheres that could surround any one vertex of the system. Whereas the original isotropic vector matrix, with all its vector "lines" the same, provided the set of vertexes that were the centers of unit-radius, omni-closest-packed spheres, we now witness experimentally with a stretchable, rubber-vectored, allspace-filling, originally unit-edged, triple-bonded complex of tetrahedra and octahedra, that the whole system may be stretched, torqued, and angularly wrench-distorted. Ergo, we witness the ways in which the vector equilibrium, or most inter-economical vectorial relationship of 12-around-one sphere centers in closest packing, may be omnidirectionally distorted to accommodate a plurality of spherical magnitudes in an as-yet closest possible interrelated neighborhood array of the respective centers of disparate-size spheres, with some spheres tangent to their neighbors and others disconnected.

782.40 **Isotropic Modular Grid:** In the same experimental model exploring manner, we discover that whereas locally verifiable parallel lines running off to the horizon appear to converge, it becomes a local observational experience reality that what is constructed as a many-miles-wide, -high, and -long isotropic vector matrix of 10-foot modules, with its vertexes occupied by omniuniform radius spheres of 10-foot diameters each, in omniclosest packing, may be photographed or drawn as seen in perspective from one locus outside the system. The sizes of the individual spheres and of the edge lengths and triangular "areas" are experientially witnessable as progressively diminishing in size as they extend, respectively, remote from the observer. The size variations may be measured accurately on a viewer's modular-gridded, hairwire-in-glass screen, mounted vertically, immediately in front of the viewer. It is also experientially observable and documentable that despite these observed progressively diminishing alterations of relative intersystem size, the topological-inventory characteristics of relative abundance of vertexes, faces, edges, A and B Modules, and the sum total of angles around the vertexes—all remain unaltered.

782.50 **Time as Relative Size Experience:** Local variability within total order synergetically explains and defines the experience ``time,'' which is relative size experience. The magnitude of the event characteristics is always accounted in respect to other time cycles of experiences. The cosmically permitted and experientially accommodated actuality of the individual's unique variety of sensorially differentiated local in time-space experiences also accommodates the experienceability in pure principle of individually unique physical life in concert with the only metaphysically operative, cosmically liaisoned, weightless, abstractly conceptual mind, by means of all of which physically and metaphysically coordinate experienceable principles it is experimentally discoverable how genetic programming accomplishes the ``instinctive'' conditioning of subconscious, brain-monitored, relative pulsation aberration and transformation controls, which are all reliably referenced entirely subconsciously to the eternally undisturbed, cosmic-coordination regularities unbeknownst to the individual biological organism "experience."

783.00 **Moebius Strip and Klein Bottle**

783.01 Moebius's arbitrarily shadow-edged strip and Klein's rimless bottle are only self-deceptively conceivable as absolute solids or as absolute continuities with inherently absolute edges and lines. The Moebius strip does not have an edge: it is a tube. Lack of any experimental evidence of any such phenomena as absolute solids or absolute continuities with inherently absolute edges and lines induced physicists to abandon the concepts of solids and absolute continuities.

783.02 In their bottle and strip propositions, both Klein and Moebius employ the working assumption of absolute solids and surface continuums. The humanly experienceable surprise qualities of their findings are the same surprise experiences of audiences of expert magicians who seem to produce results by means other than those which they actually employ. The implied significance of the bottle and strip findings vanishes in the presence of the synergetic surprise of the topological constants of the vector equilibrium's hierarchical regularities independent of size, inside-outing, turbining, and so forth. Unlike Moebius's and Klein's experimentally undemonstrable constructed substances, the information input of synergetics and tensegrity are wedded experientially only with the full gamut of the thus far published experimental findings of astrophysics, chemistry, and microbiology.

784.00 **Allspace-Filling Tensegrity Arrays**

784.10 **Basic Allspace Fillers:** The tensegrity tetrahedron and the tensegrity octahedron are volumetrically complementary, and together they may fill allspace. The tensegrity icosahedron refuses to complement either itself or the tetrahedron or octahedron in filling allspace, but isolates itself in space, or goes on to make up triple- bondedly into larger octahedra, which may then complement tetrahedra to fill allspace.

784.11 Tensegrity icosahedra provide by far the most volume with the least structural effort of the three basic structural systems. The tetrahedron has the least volume with the most surface; the octahedron is in the middle; and the icosahedron gives the most with the least.

784.12 In the icosahedron, five quanta give twenty units of enclosed volume, which means four units of volume for each energy quantum invested in the enclosing structure. Whereas in the tetrahedron one quantum will enclose only one unit of volume. The octahedron gives two units of volume for each quantum. Therefore, the icosahedron gives the most for the least effort.

784.13 The three-islanded tensegrity octahedron, in its positive and negative phases, is fundamental to all tensegrity structures. (See illustration 724.10.)

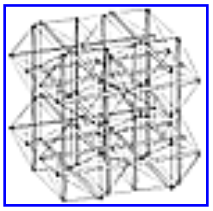

Fig. 784.20

784.20 **Eight-Icosahedra Tensegrity Array:** The three sets of parallel pairs of struts which form the tensegrity icosahedron may be considered as parallel to the three axes of the XYZ coordinate system. The same three sets of parallel pairs of the tensegrity icosahedron may be considered also as two omni-axial sets of tensegrity octahedra. This octahedron-icosahedron parallelism relationship explains why it is possible to collect tensegrity icosahedra in approximately unlimited periodic arrays. A set of eight icosahedra is shown in the illustration.

784.21 Note that the rows of parallel struts can be repeated to infinity and the length of each strut can be infinitely long. The tension net that forms the icosahedron edges stabilizes the array of struts.

Fig. 784.30

784.30 **Tensegrity Icosahedra Surrounding a Nuclear Icosahedron:** Six icosahedra may be arrayed around a nuclear icosahedron in a true XYZ-coordinate model.

784.40 **Limitless Array of Tensegrity Icosahedra:** In addition to single-strut tensegrity icosahedral systems, it is possible to organize an only-time-limited, omnidirectionally extensible, uniformly periodic array of tensegrity icosahedra in which each compression member of finite length is common to only two icosahedra.

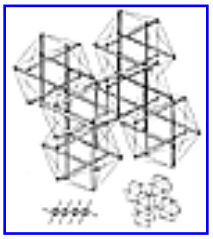

Fig. 784.41

784.41 This system consists of a series of omnidirectionally staggered layers of icosahedra. A spatial array of six icosahedra is shown both as a tensegrity system and as a collection of "transparent" icosahedra. The lower diagram indicates the method of staggering which results in each compression strut being shared by only two adjacent icosahedra.

Next Section: 790.00

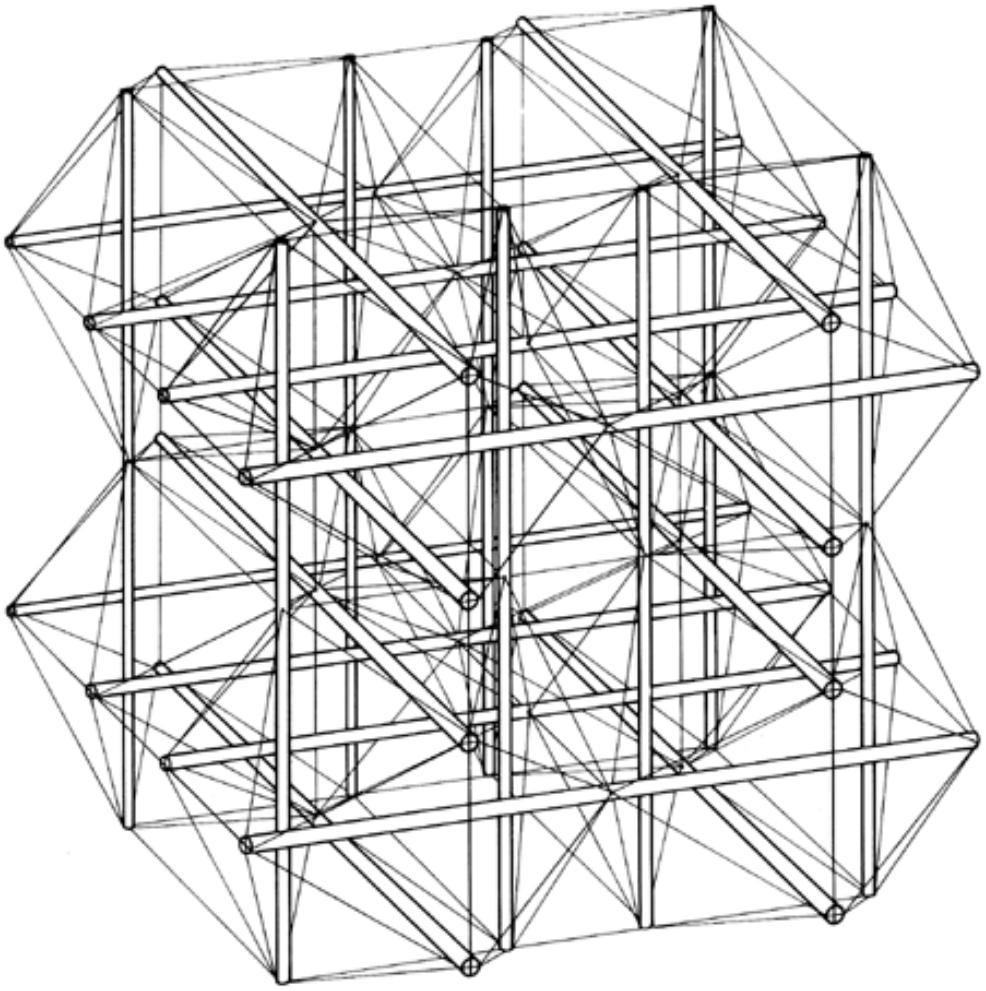

Fig. 784.20

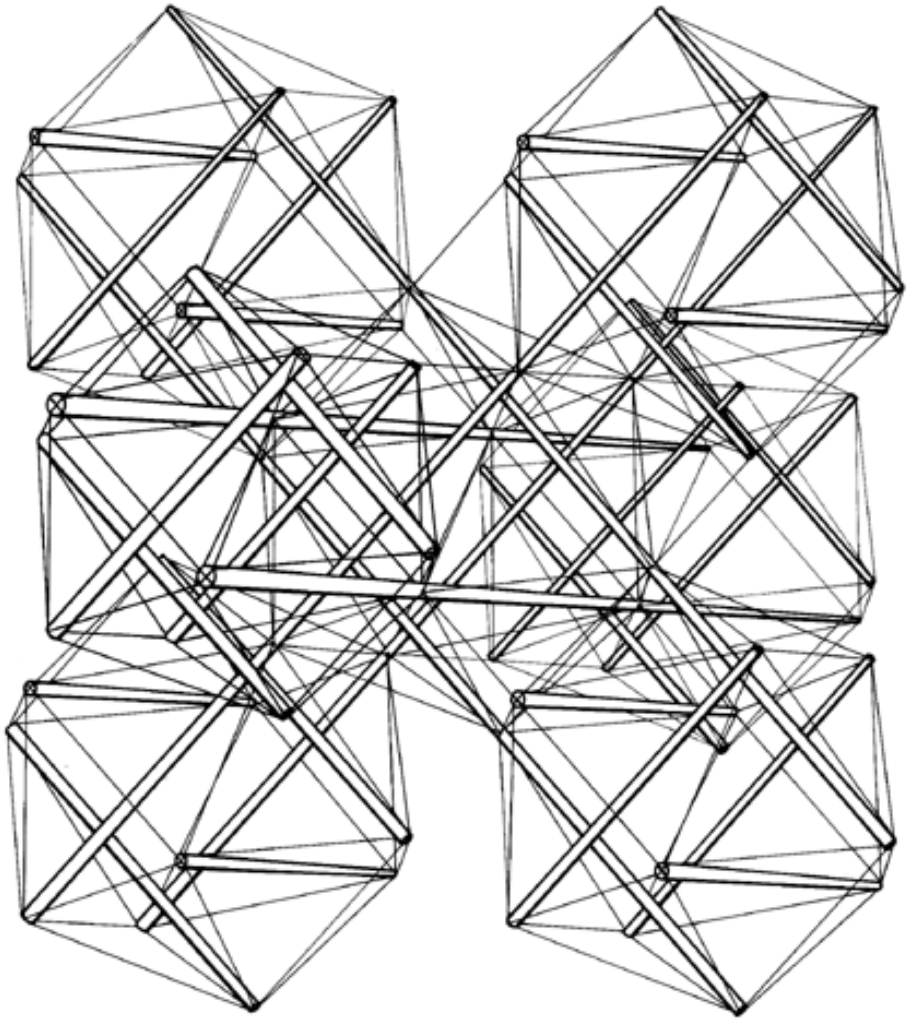

Fig. 784.30

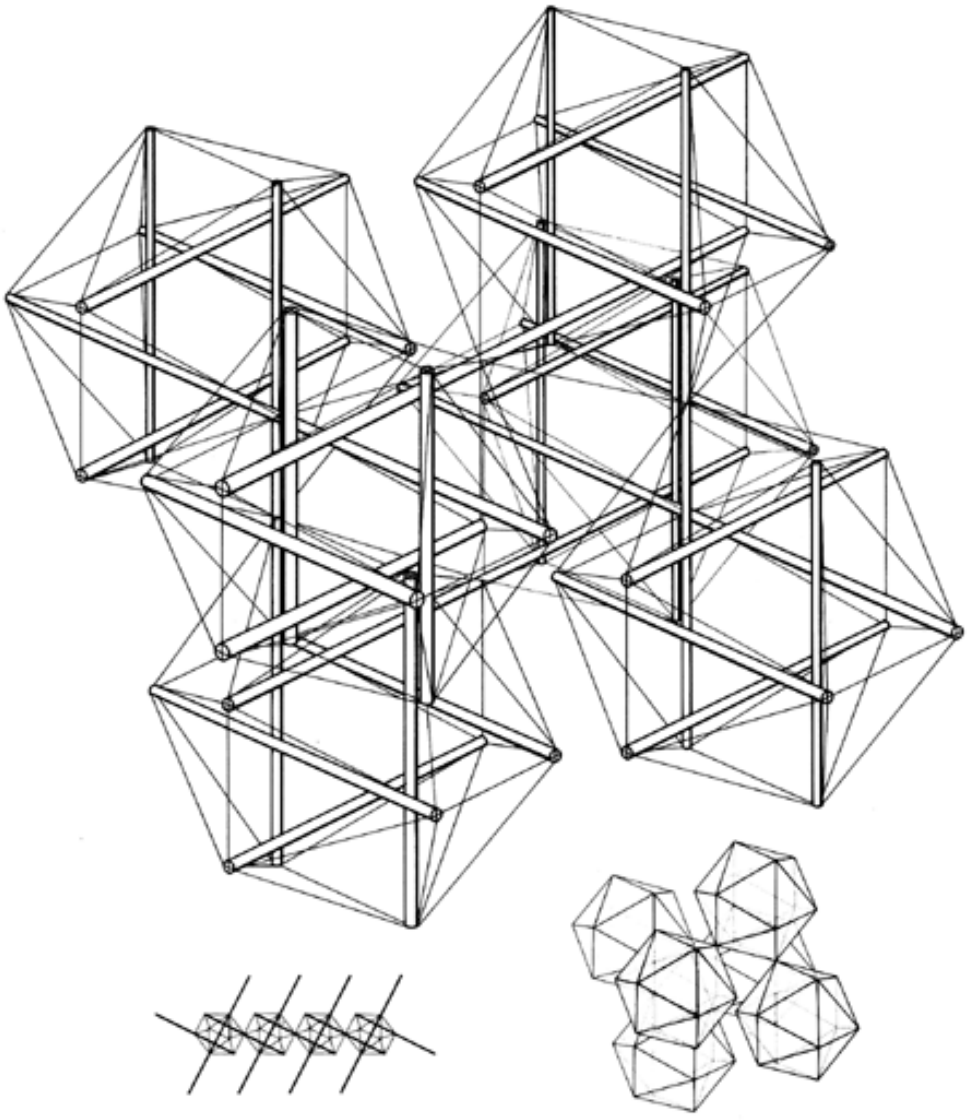

Fig. 784.41 Indefinitely Extensive Array of Tensegrity Icosahedra.