470.00 **Allspace-Filling Transformations of Vector Equilibrium**

470.01 In the closest packing of spheres, there are only two symmetric shapes occurring in the spaces between the spheres. They are what we call the concave octahedron and the concave vector equilibrium. One is an open condition of the vector equilibrium and the other is a contracted one of the octahedron. If we take vector equilibria and compact them, we find that the triangular faces are occupying a position in closest packing of a space and that the square faces are occupying the position in closest packing of a sphere. (For a further exposition of the interchange between spheres and spaces, see illustrations at Sec. 1032, "Convex and Concave Sphere Packing Voids.")

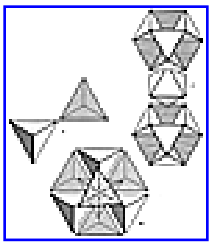

Fig. 470.02A

470.02 When we compact vector equilibria with one another, we find that two of their square faces match together. Within a square face, we have a half octahedron; so bringing two square faces together produces an internal octahedron between the two of them. At the same time, a set of external octahedra occurs between the triangular faces of the adjacent vector equilibria.

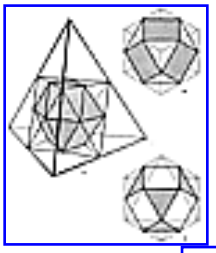

Fig. 470.02B

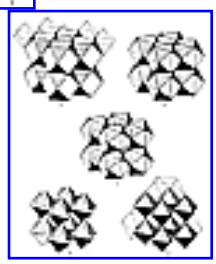

Fig. 470.02C

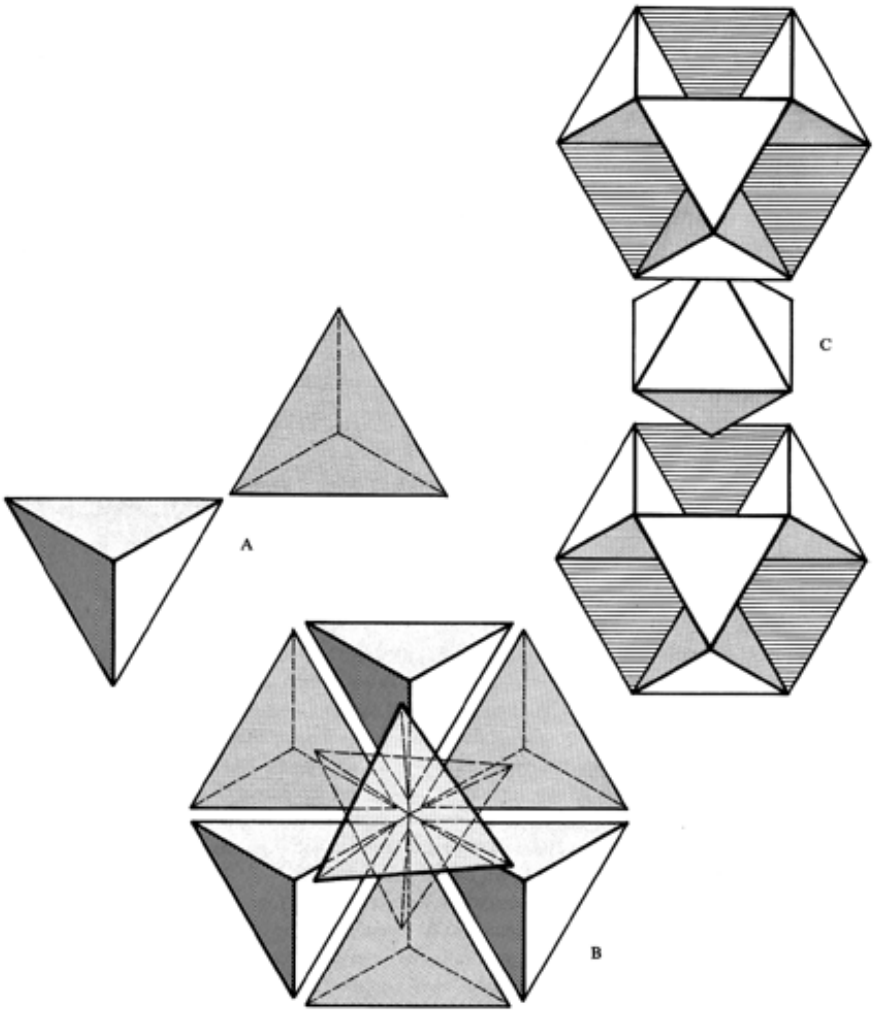

Fig. 470.02A Role of Tetrahedra and Octahedra in Vector Equilibrium:

A. Positive-negative tetrahedron system.
B. Vector equilibrium formed by four positive-negative tetrahedron systems with common central vertex and coinciding radial edges. Equilibrium of system results from positive-negative action of double radial vectors.
C. The relationship of space-filling tetrahedra and octahedra to the vector equilibrium defined by eight radially disposed tetrahedra.

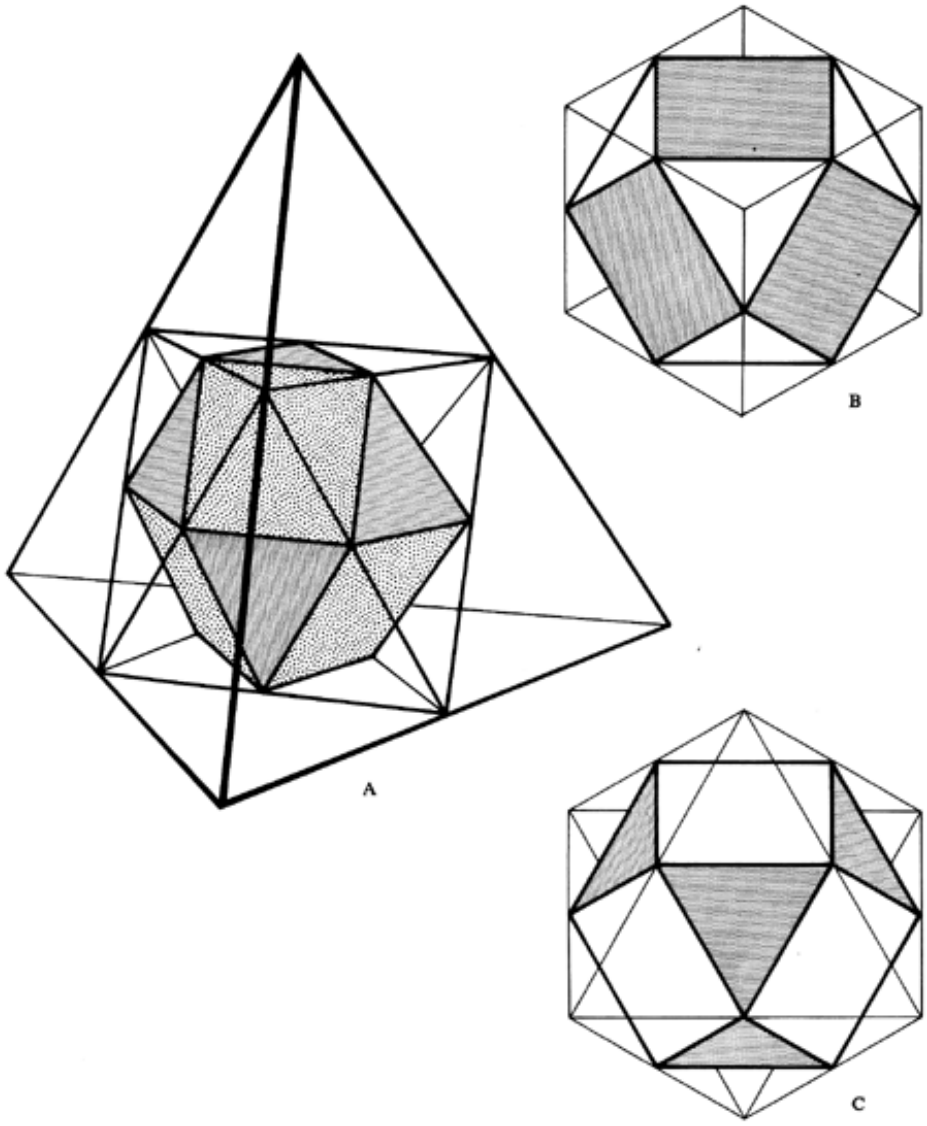

Fig. 470.02B. Relationship of Vector Equilibrium to Cube and Octahedron:

A. Joining and interconnecting the midpoints of tetrahedron edges results in the octahedron. Joining and interconnecting the midpoints of the octahedron edges results in the vector equilibrium.
B. Relationship of the vector equilibrium to cube.
C. Relationship of vector equilibrium to octahedron.

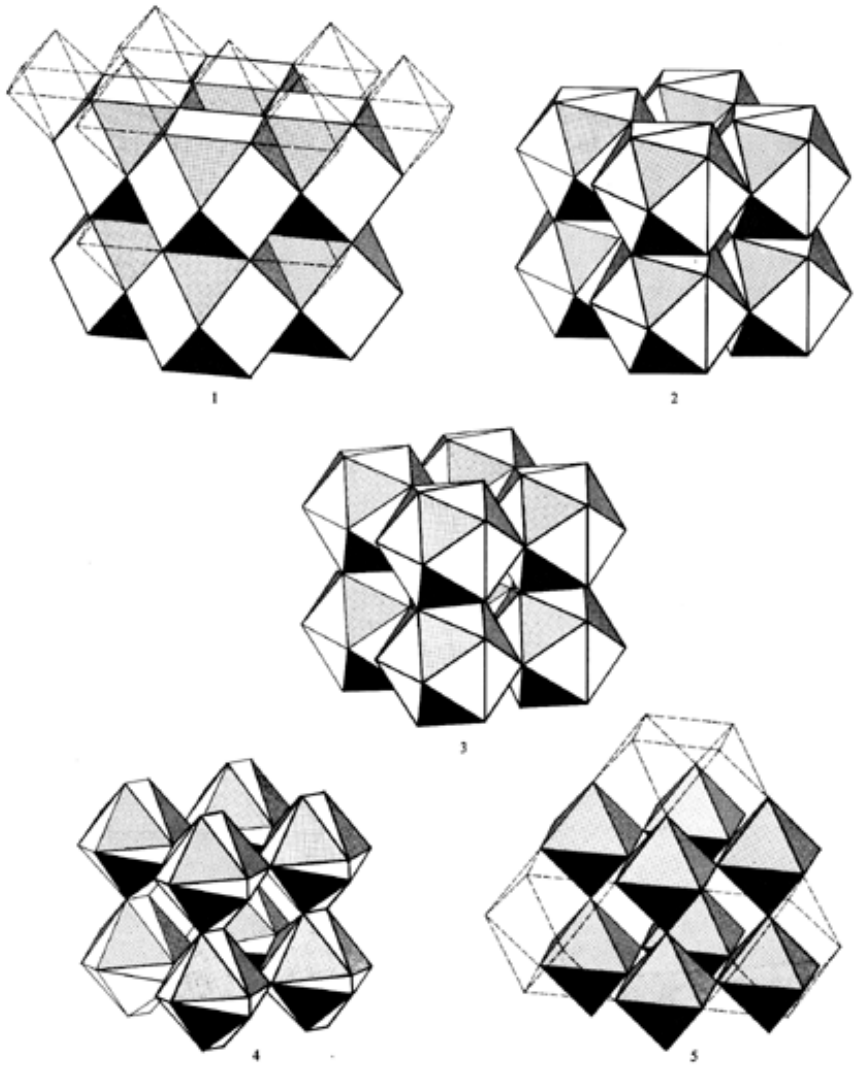

Fig. 470.02C Transformation of Vector Equilibrium and Octahedron as Space-Filling Jitterbug: Because the vector equilibrium and the octahedron will fill space, it is possible to envision a space- filling "jitterbug" transformation. If we combine vector equilibrium on their square faces in a space- filling "jitterbug" arrangement, the triangular faces form octahedral voids (1). As the vector equilibria contract, just as in the single "jitterbug," they transform through the icosahedron phase (3) and end at the octahedron phase (5).

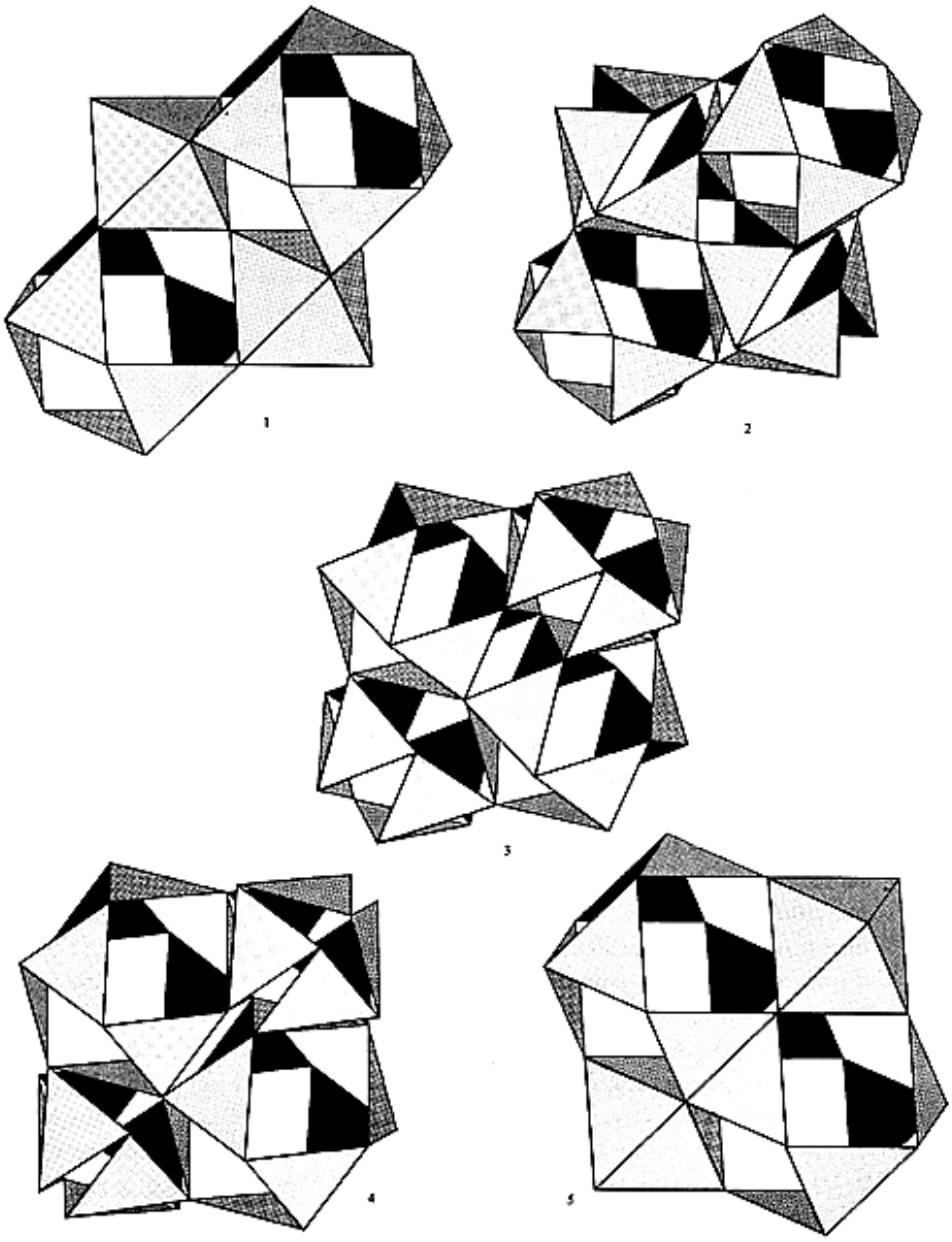

Fig. 470.02D Reciprocity of Vector Equilibrium and Octahedra in Space-Filling Jitterbug: In the space-filling "jitterbug" transformation, the vector equilibria contract to become octahedra, and, because in space filling array there are equal numbers of octahedra and vector equilibria, the original octahedra expand and ultimately become vector equilibria. There is a complete change of the two figures.

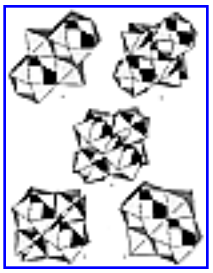

Fig. 470.02D

480.00 **Tetrahedron Discovers Itself and Universe**

481.00 The initial self-and-other spherical associability (see Sec. 401 and illustration 401 produced first, associability; next, triangulation as structure; and then, tetrahedron as system. The inherent self-stretch-apartness reaction identified as mass attraction, and the inherent otherness of awareness, and the discovery of the self through the otherness, as a consequence of which awareness of relatedness, and curiosity about the interrelatedness of further unprecedented self-and-otherness discoveries, all initiate the tetrahedron's self- discovering that it can turn itself inside out by employing the masscoherent integrity of any three spheres's intergeared frictionality to swallow involutingly the fourth sphere through the three's central passage and to extrude it evolutingly outward again on the other side.

482.00 Thus tetrahedron discovers that each of its four vertexes can be plunge-passaged through its innards to be extended on the opposite side of its four triangular faces. This automatically develops eight tetrahedral, self-transformation awarenesses and produces eight common nuclear-vertex tetrahedra of the vector equilibrium.

483.00 Further self-examination of the tetrahedron discovrs that the geometry of its insideness proves to be a concave octahedron, with four of the octahedron's triangular faces represented by the four triangular windows at the face centers of the tetrahedron and the other triangular faces hidden from the view of outsiders, but clearly viewable from inside the tetrahedron's system as the spherical triangular areas of the interior surfaces of the tetrahedron's four corner balls; the edges of the triangles are defined as the great circle arcs leading most economically between each ball's three interior tangent contact points with each of the other three balls, respectively.

484.00 And now we have the octahedron self-examinatingly discovered and more sharply defined by the 12 chords of the great-circle arcs being realized as shorter distances than arcs, as lines of sight, between their six common vertexes. Thereafter, awareness of the fourfold equatorial square symmetry of four of those octahedral, equidistanted six vertexes of the octahedron, and discovery of the three XYZ axes crossing one another at the octahedron's center within the shortest distance centrally apart from the three sets of opposite vertexes or poles, thus establishing the one-quarter full circle as well as the one- sixth full circle angular self-fractionating as the octa-andtetra interpump through the phases of the icosa into full extension of the vector equilibrium: "equanimity" of all potential systems and the extreme local domain of its local self-realization.

485.00 Thereafter, self-recognition of its six half-octahedra aspects of its own six polar potentials, and thence the self-discovery of its integral four great-circle symmetry, and its vector equanimity of effectively opposed disintegrative propensities by its mass- attractive, full-circle closingness at highleverage advantage of radius of lever arm self- wrapping around itself, as being more powerfully effective than its self-disintegratively employed equipotential disintegrativeness; whereby the ever self-multiplications at the second-power arithmetical rate of its associative propensities are realized by their initiation, in contradistinction to the immediate second-root rate of diminution of the energy potential whenever it even starts to disintegrate.

486.00 Thus the self-discovery of the tetrahedral structural system and subsequent evolutionary realization of its inherent octahedral symmetry goes on further to discover its tetrahedron-octahedron complementarity of allspacefilling, and its development thereby of the universal isotropic vector matrix as a self-referring frame comprehensive of its relative aberrations of realizable exactitude which only approaches its ideal equanimity.

487.00 Whereafter the self-discovery process goes on to identify all the hierarchy of geometrical intertransformings that are the subject of this book, and proceeds inherently, by synergetic strategy of commencing with totality of Universe self-realization, to its progressive omnirational differentiation of its ever symmetrically equated potentials. And all other geometrical proofs of the Greeks and their academic successors aboard our self- realizing planet are herewith usably embraced; and all the rules of geometrical self- development proofs in terms of a priori self-realization proofs are discovered to be germane but always holistically embraced in omnirational identity. Self is not a priori evident. Thus we have avoided mathematical axioms that hold certain recognized a priori self-recognized conditions to be self-evidently irreducible by further analysis.

488.00 Instead of starting with parts—points, straight lines, and planes and then attempting to develop these inadequately definable parts into omnidirectional experience identities, we start with the whole system in which the initial "point" turned out to be self, which inherently embraced all of its parameters wrapped tightly in that initial underdeveloped, self-focused aspect of self and went on to self-develop through successively discovered relative awarenesses whereby the proof of totality and omni- integrity is not only always inherent, but all the rules of operational procedure are always totally observed.

Next Chapter: 500.00
