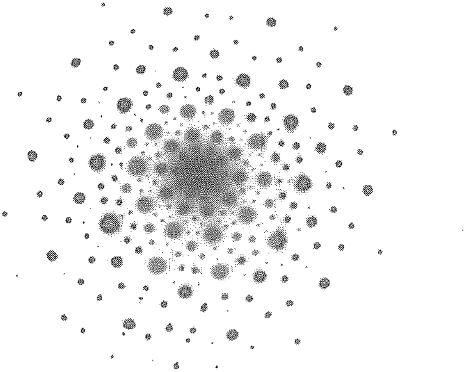
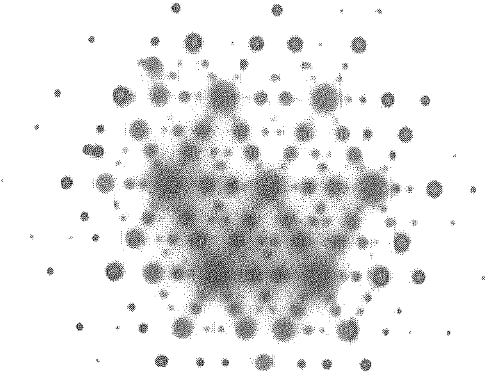
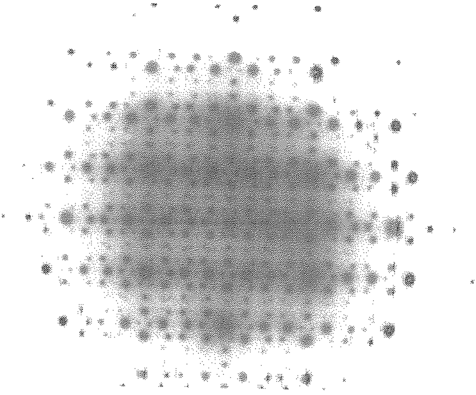
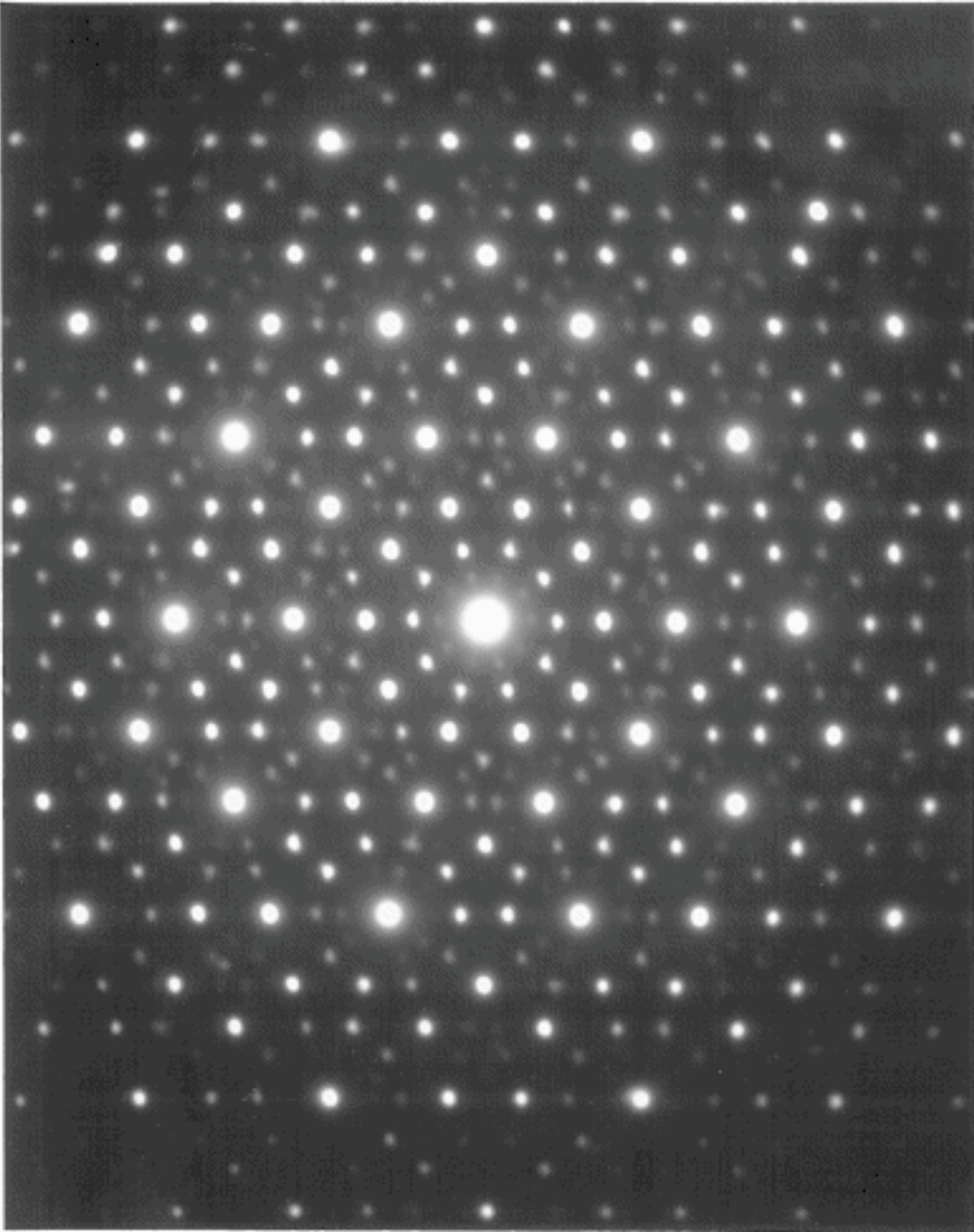








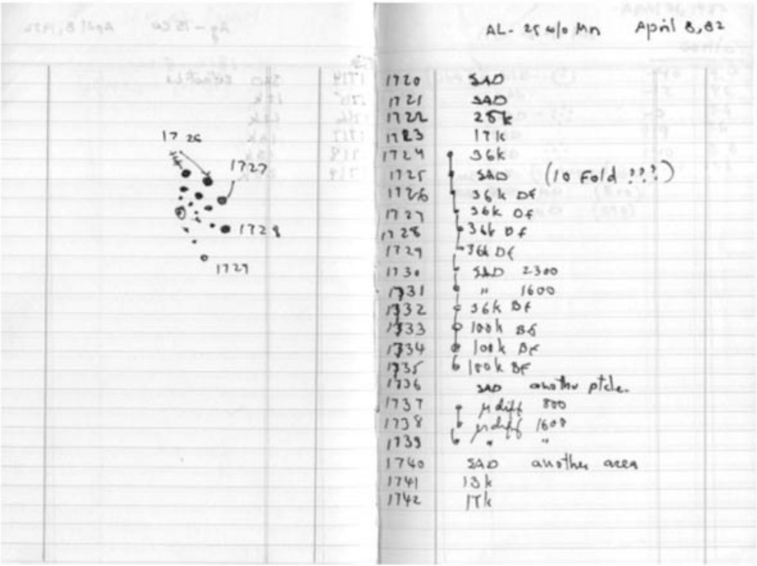
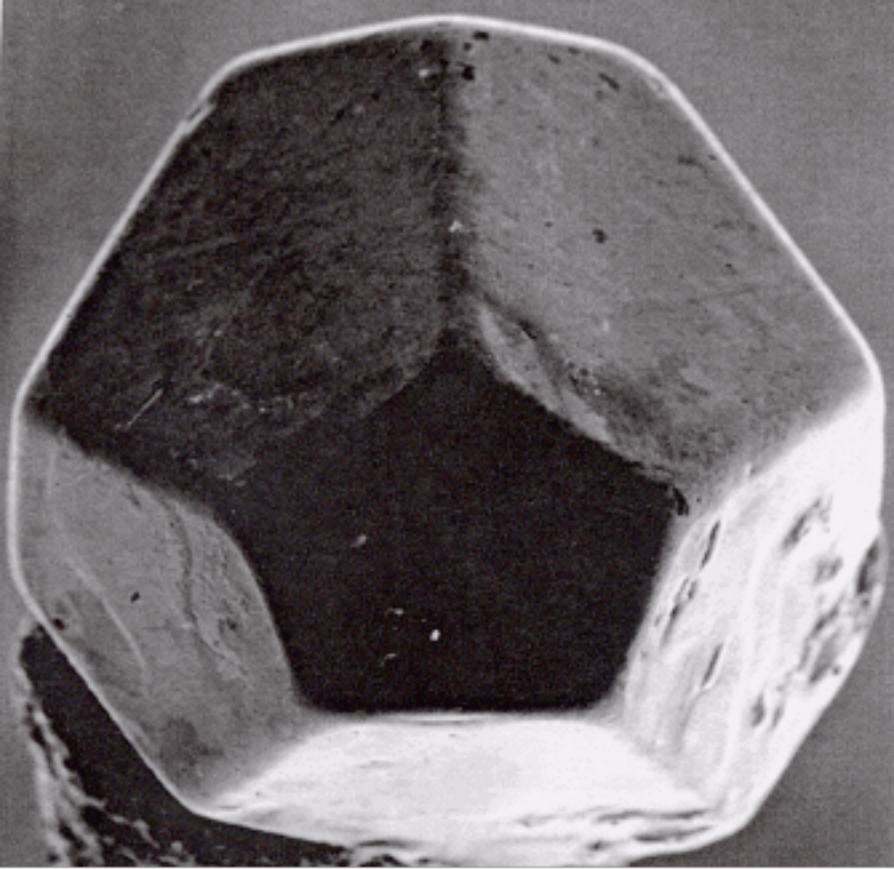
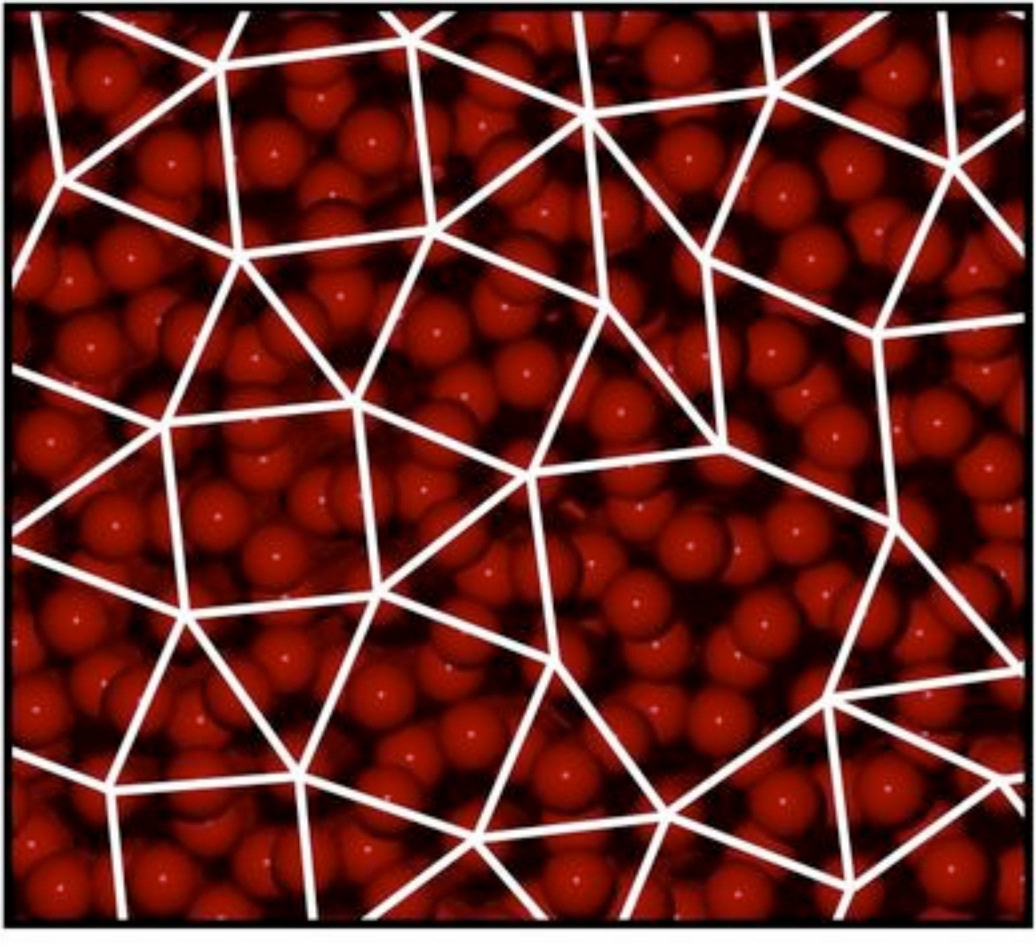
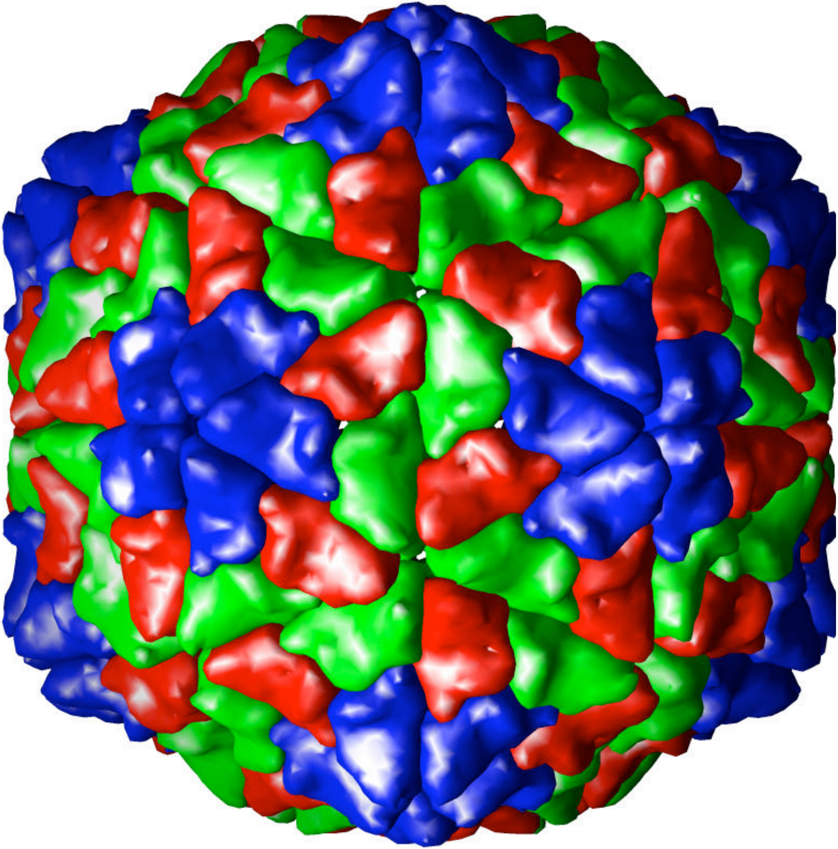
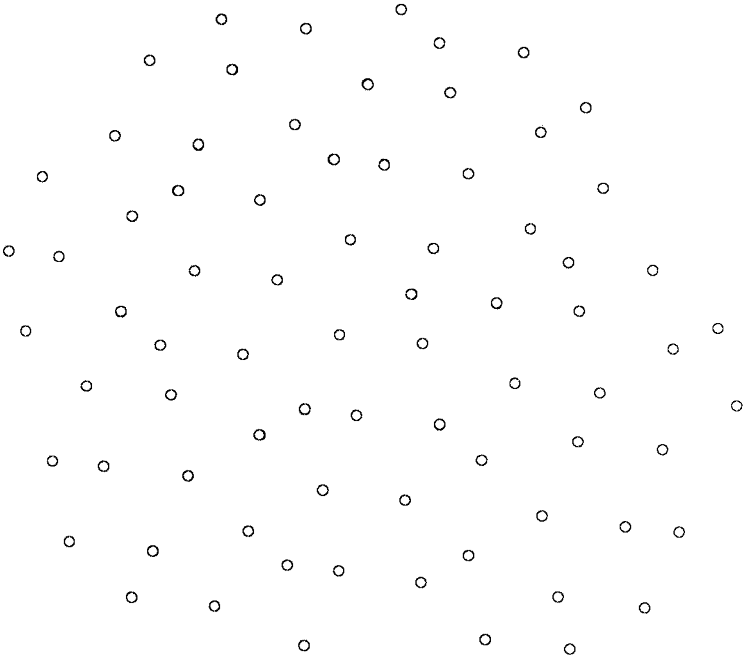


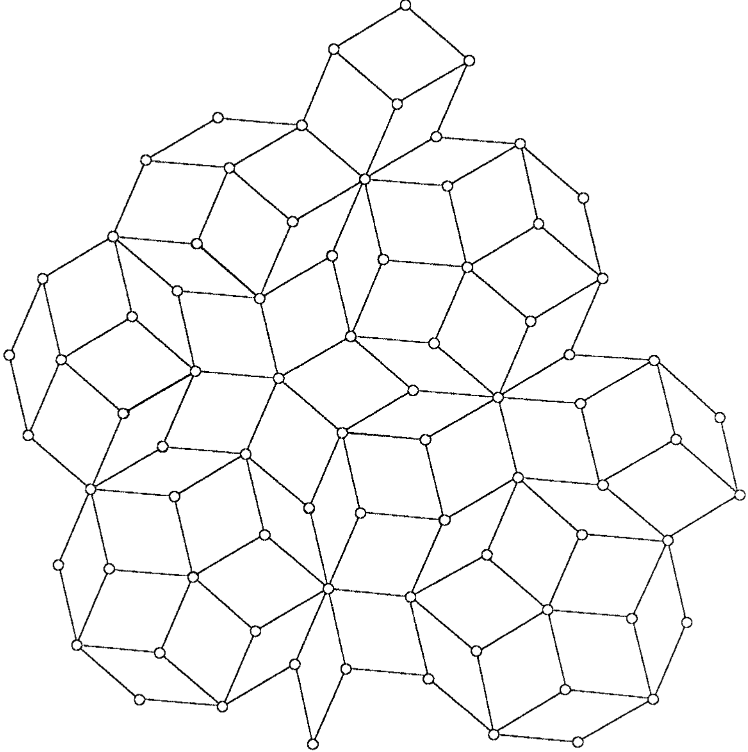
Fig. 1.12. Shechtman's notebook, in which the discovery of the icosahedral phase was written down: April 1982. (Courtesy Dan Shechtman)

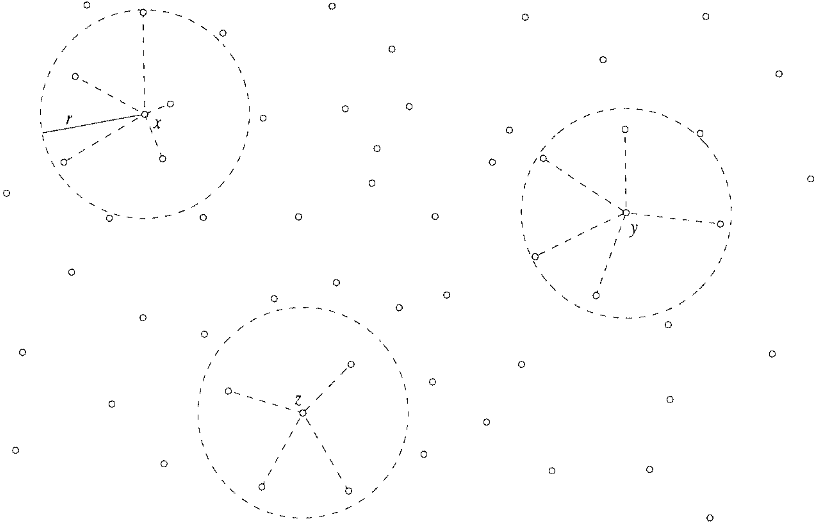











r
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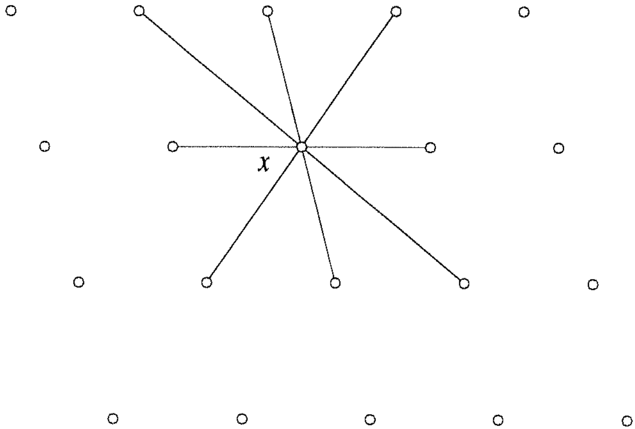
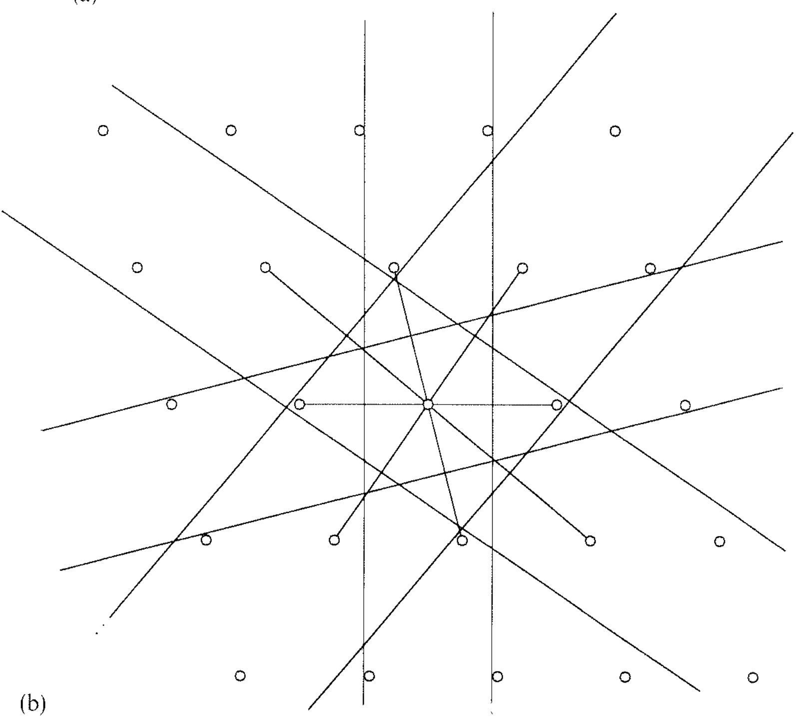
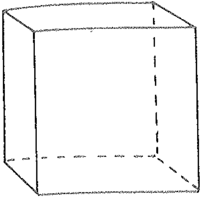
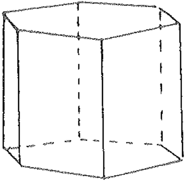
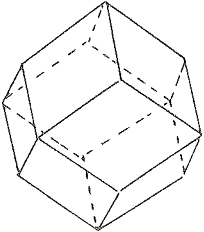
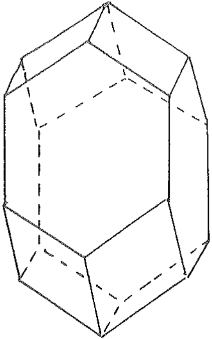
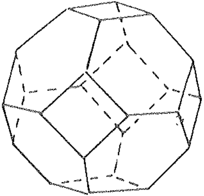
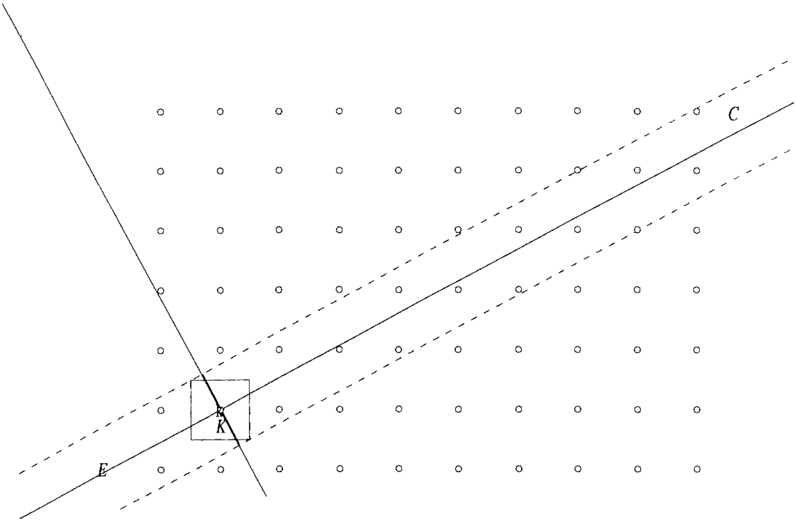


(a)

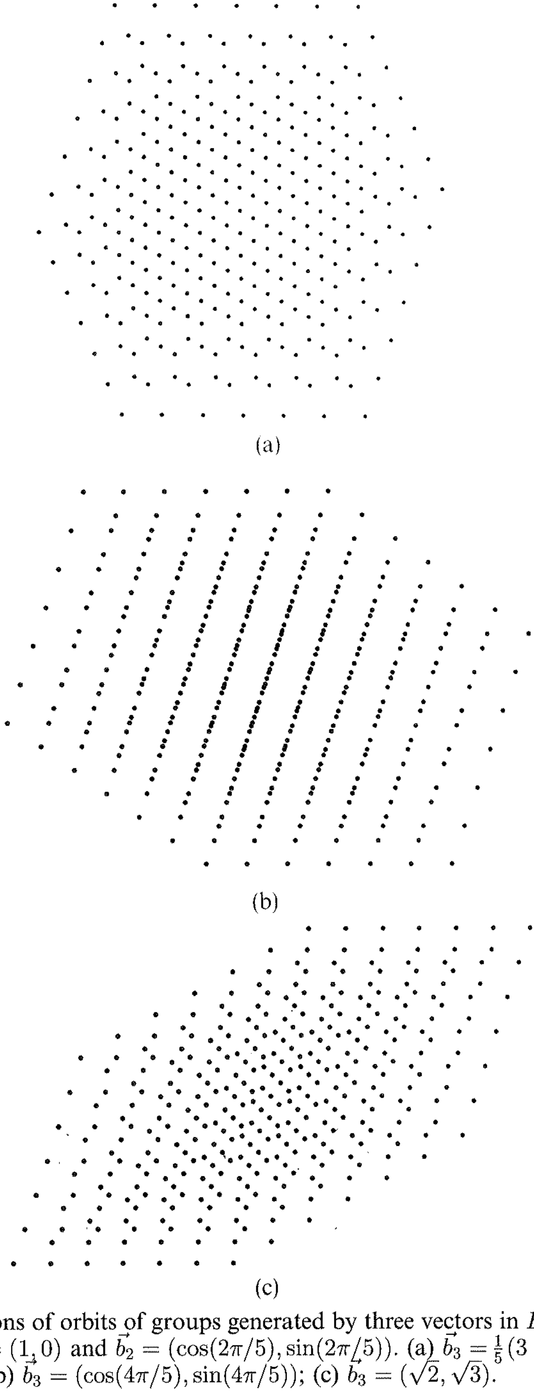


(b)



C
K
E

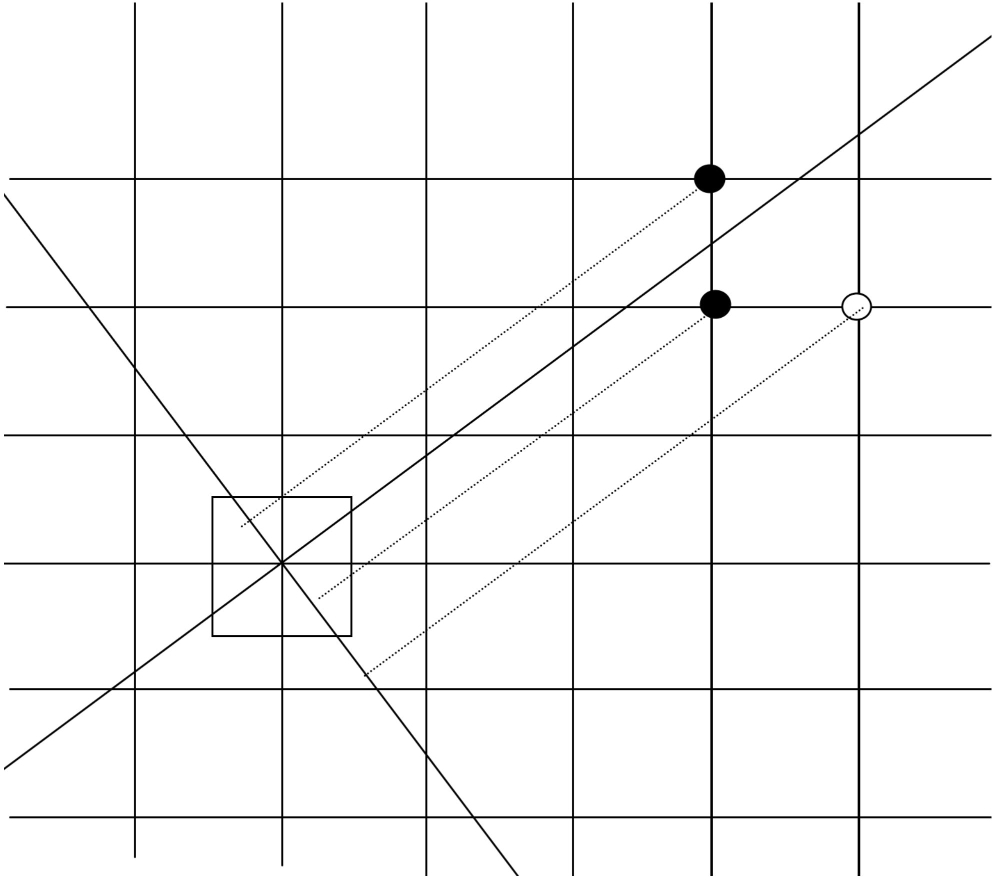


(a)

(b)

(c)

Fig. 2.1 Portions of orbits of groups generated by three vectors in E^2. In all three examples, $\vec{b}_1 = (1, 0)$ and $\vec{b}_2 = (\cos(2\pi/5), \sin(2\pi/5))$. (a) $\vec{b}_3 = \frac{1}{5}(3 + 4\cos(2\pi/5), 4\sin(2\pi/5))$; (b) $\vec{b}_3 = (\cos(4\pi/5), \sin(4\pi/5))$; (c) $\vec{b}_3 = (\sqrt{2}, \sqrt{3})$.



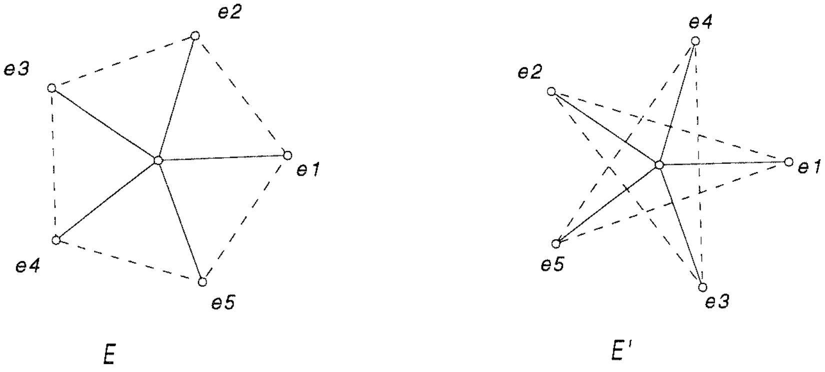
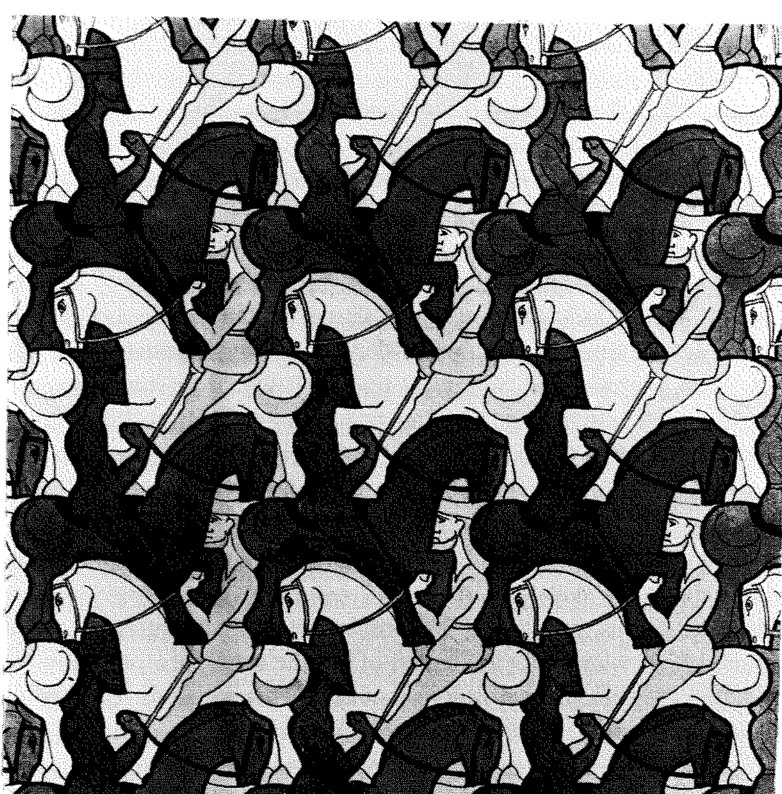


Fig. 2.13 Projections of $\vec{e}_j, j = 1, \ldots, 5$, onto $\mathcal{E}$ and $\mathcal{E}'$.



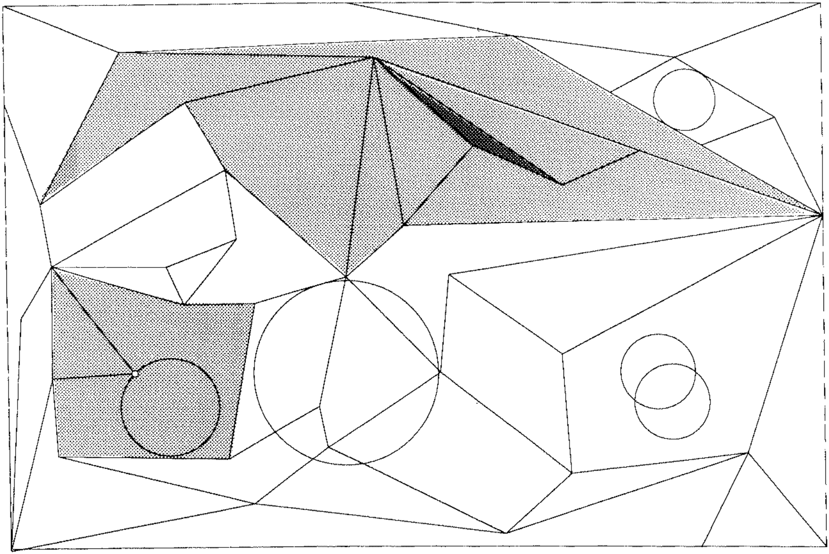


Fig. 5.5 A first corona and a vertex star.

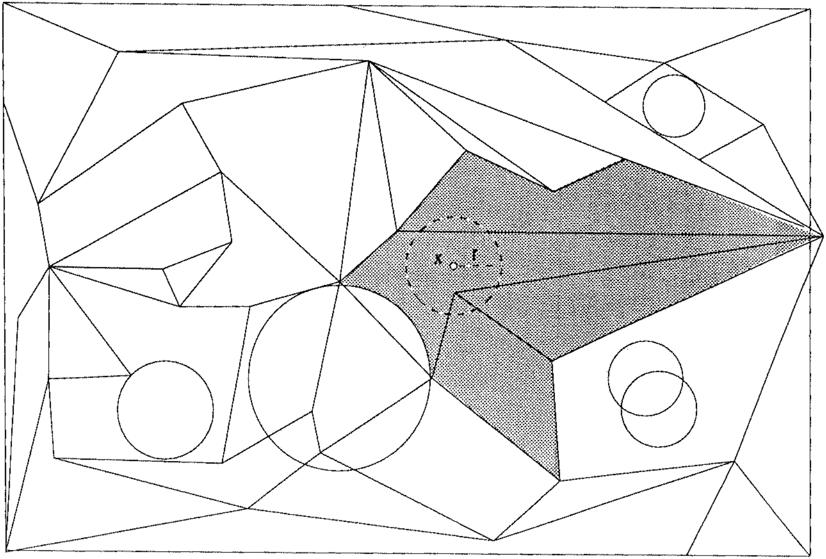
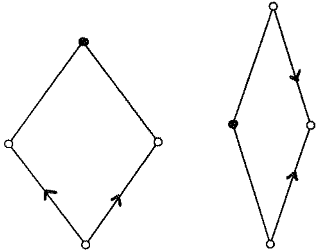
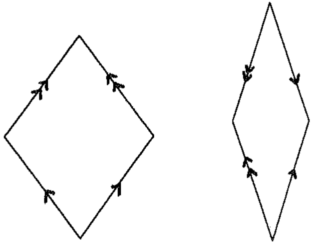


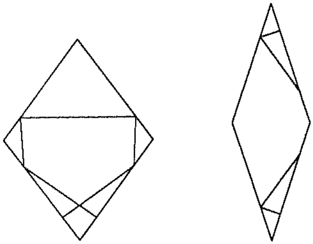
Fig. 5.4 The patch determined by $\overline{B}_x(r)$.



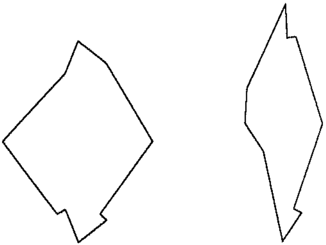
(a)



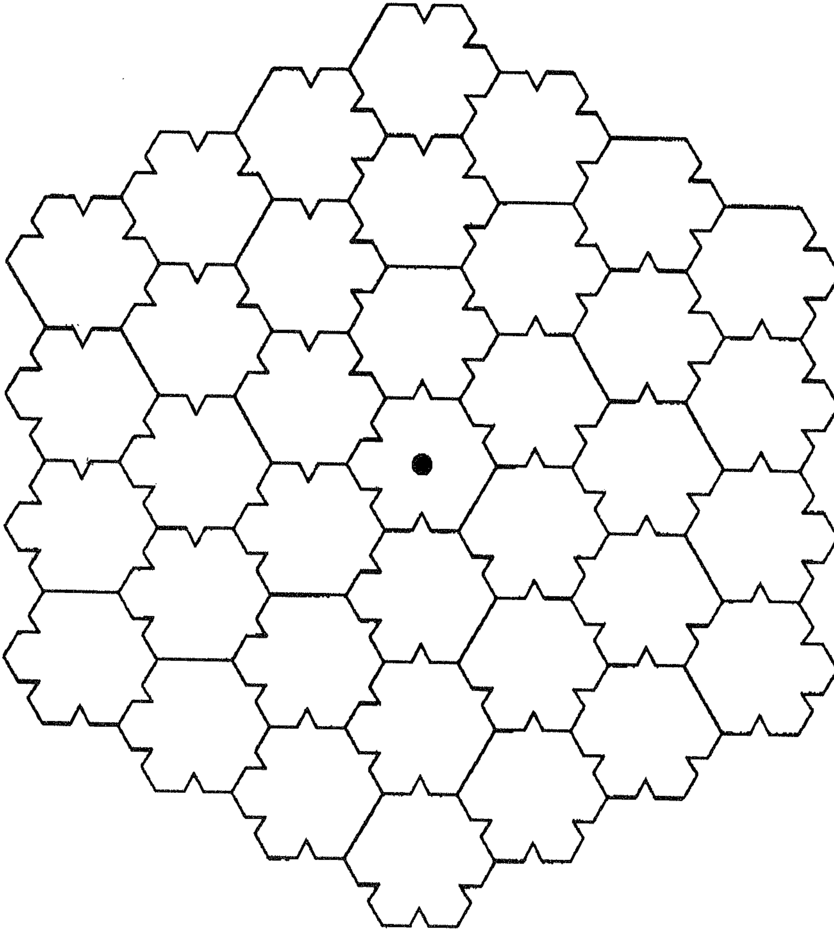
(b)

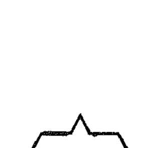


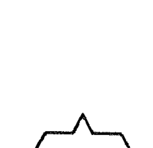
(c)

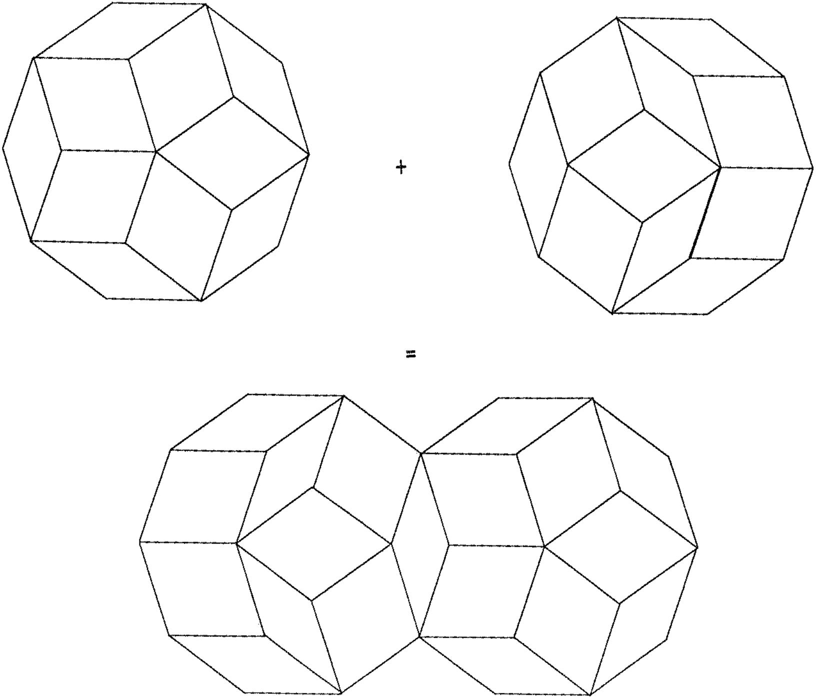


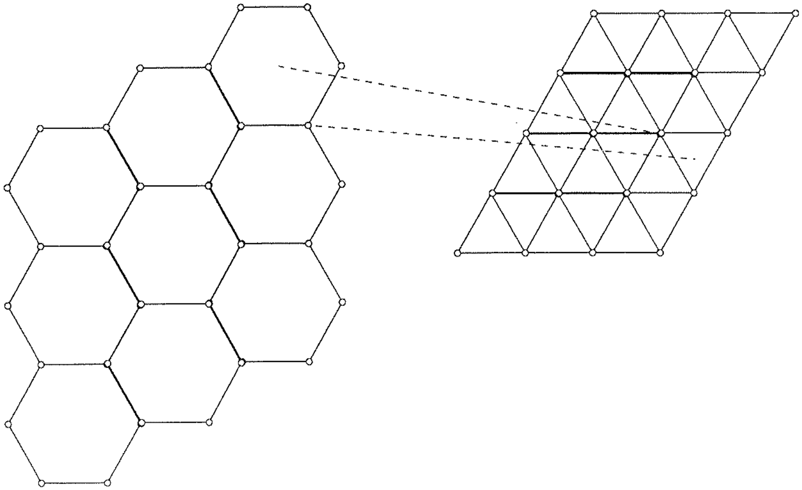
(d)

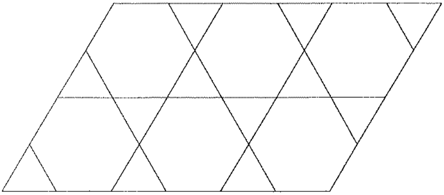






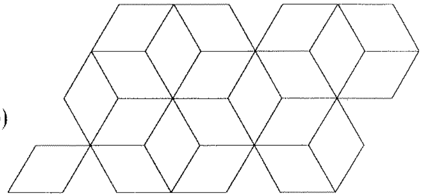






(a)

(b)



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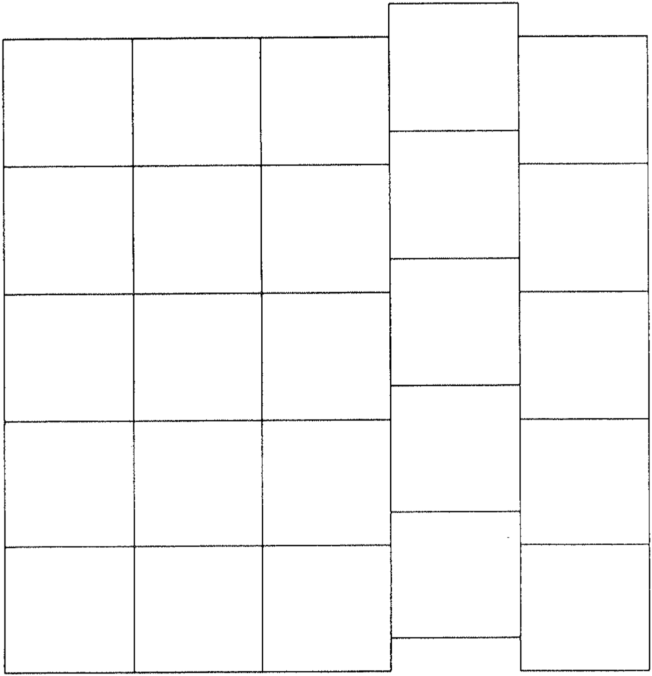

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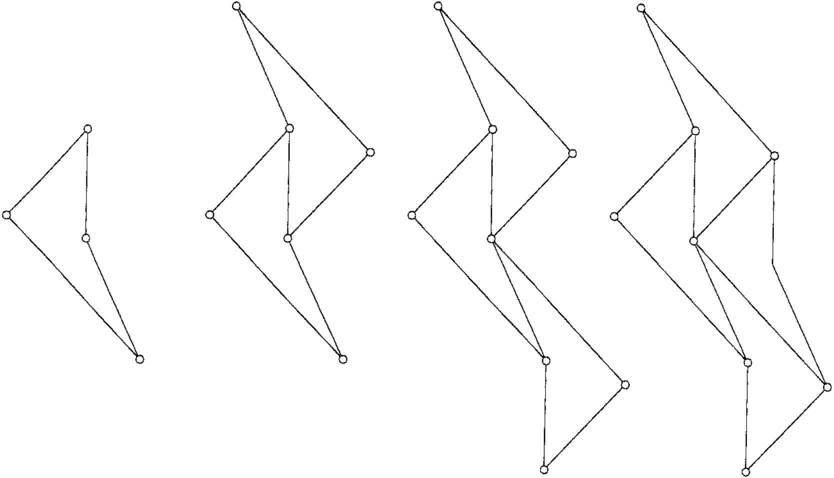
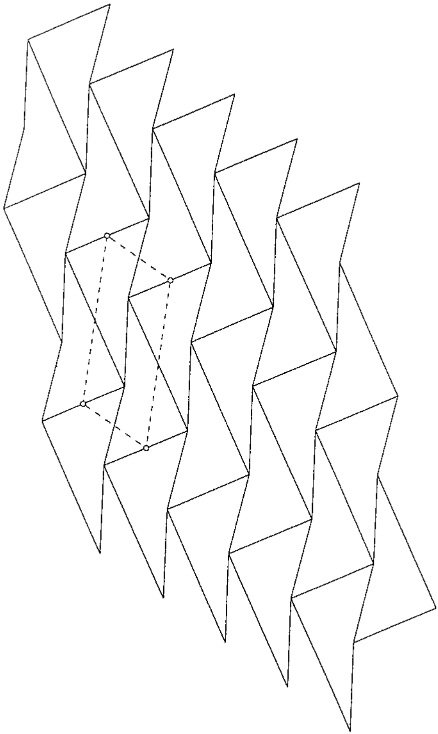
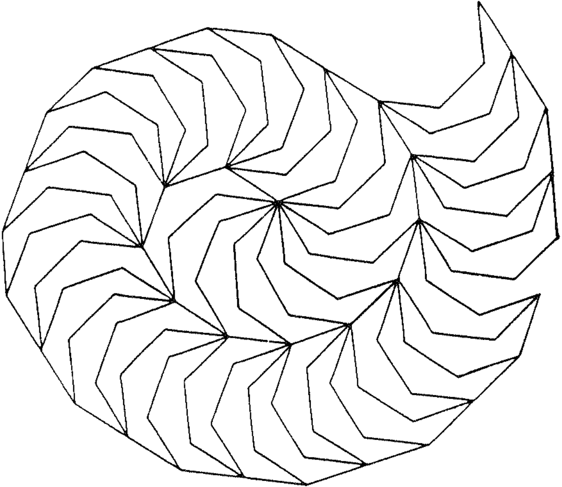
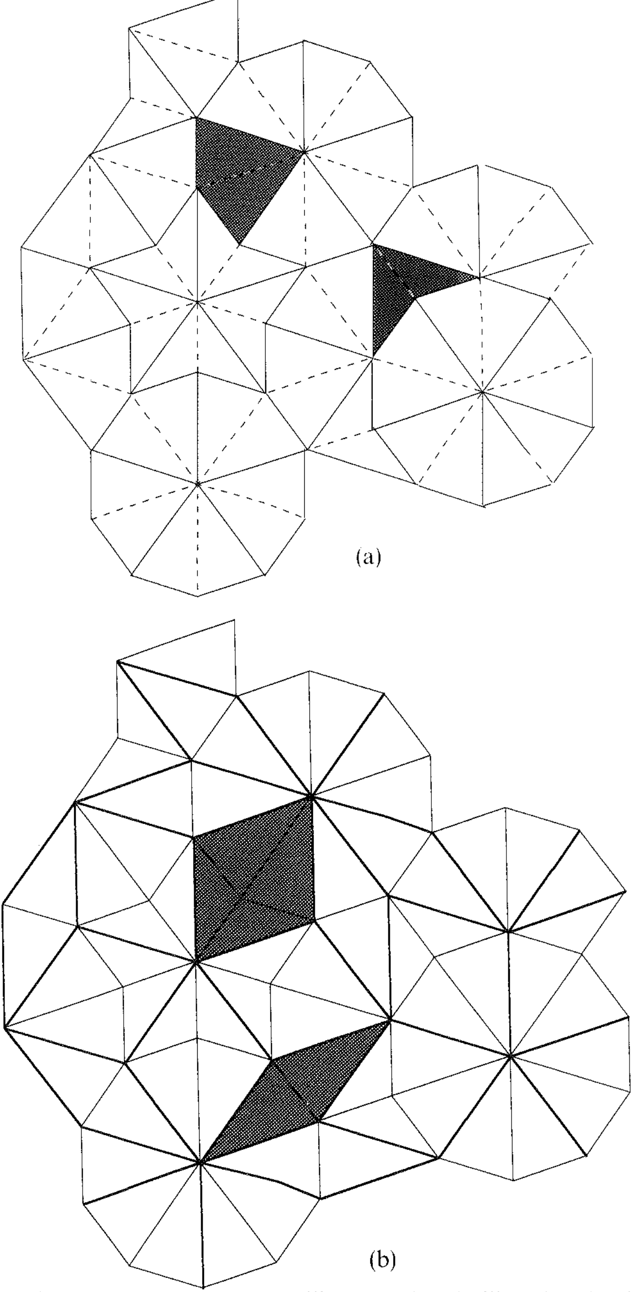




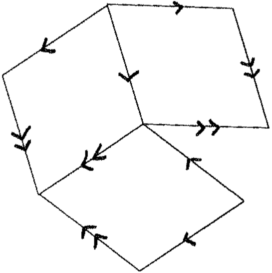


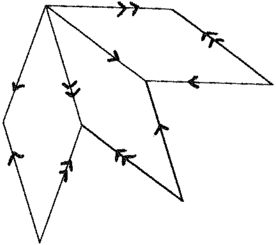


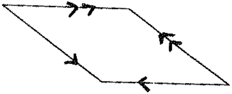
(a)

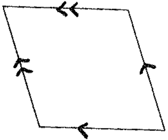
(b)

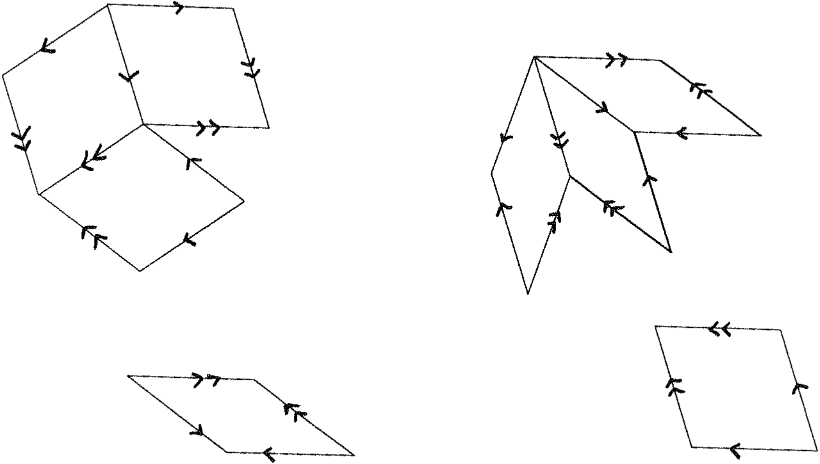
Fig. 6.4 Transition from ... tiling to ... tiling. (a) First ...

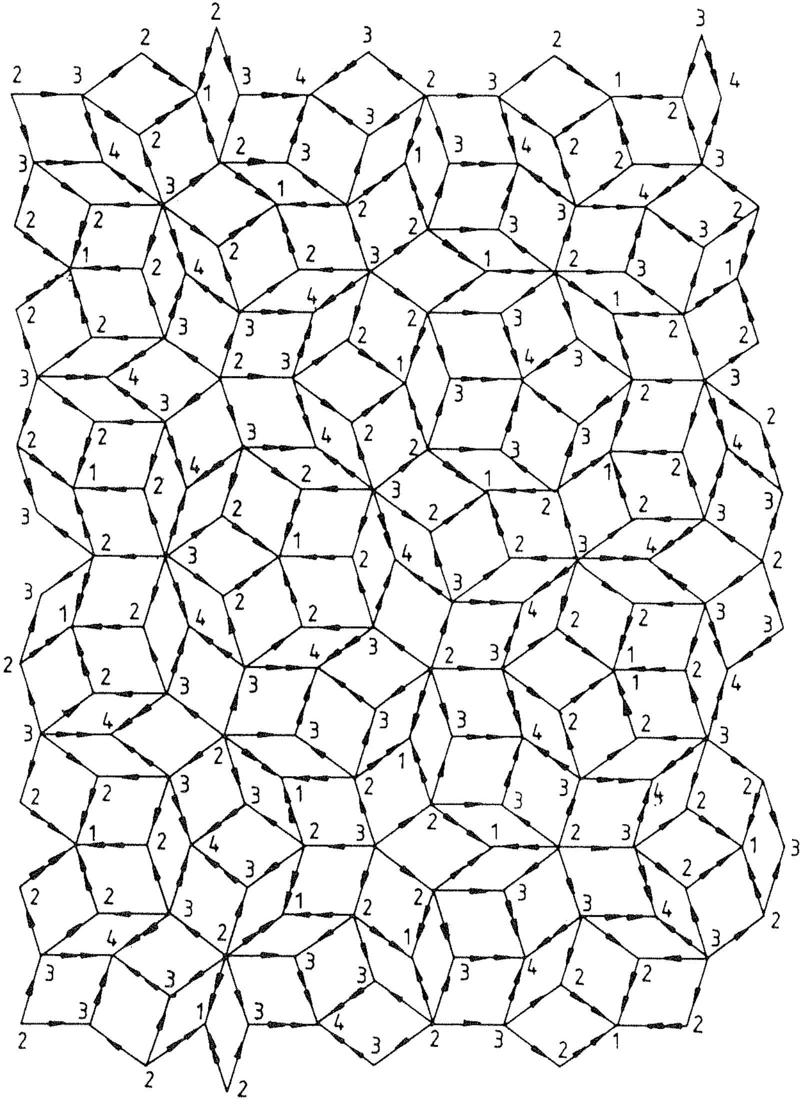


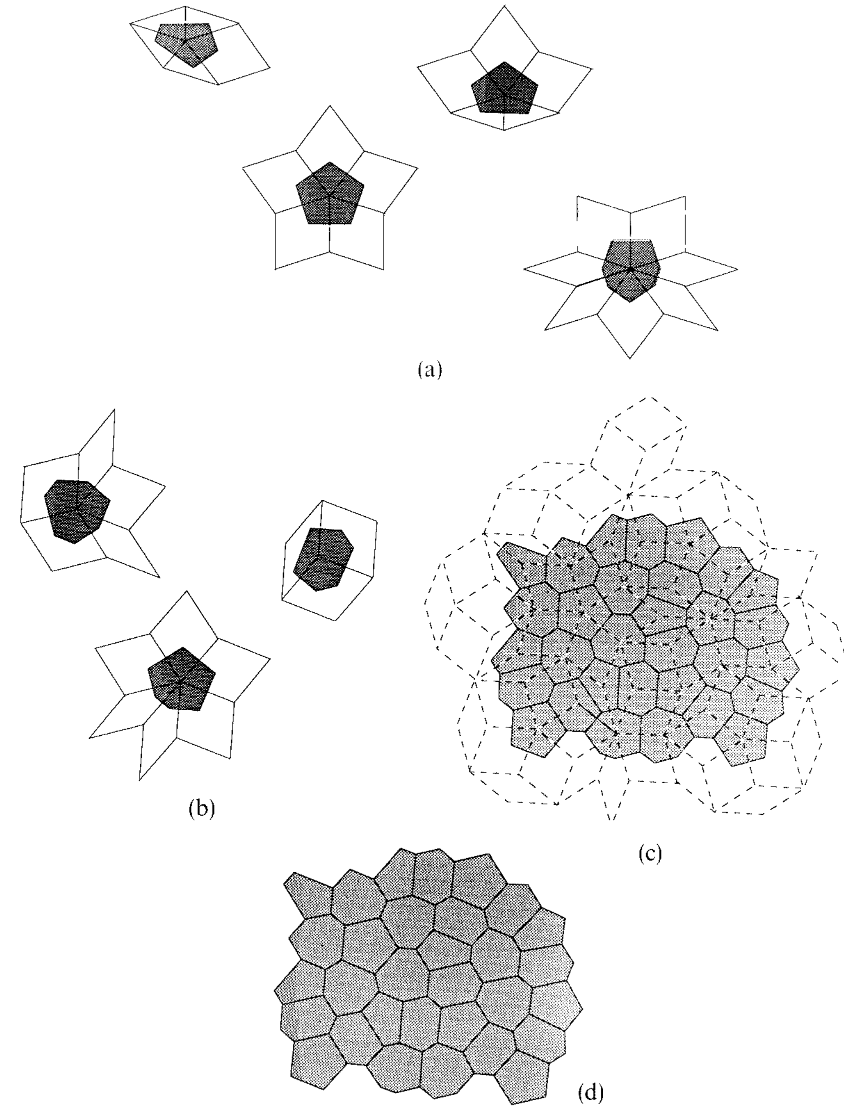


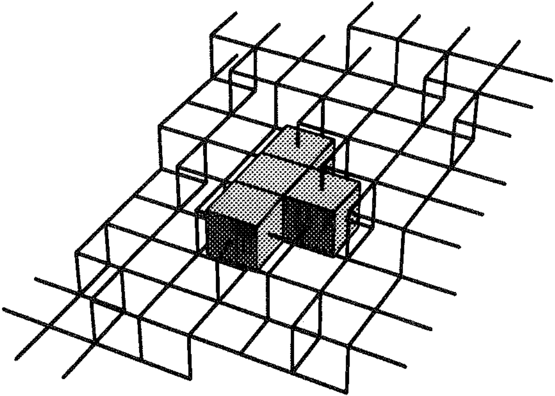


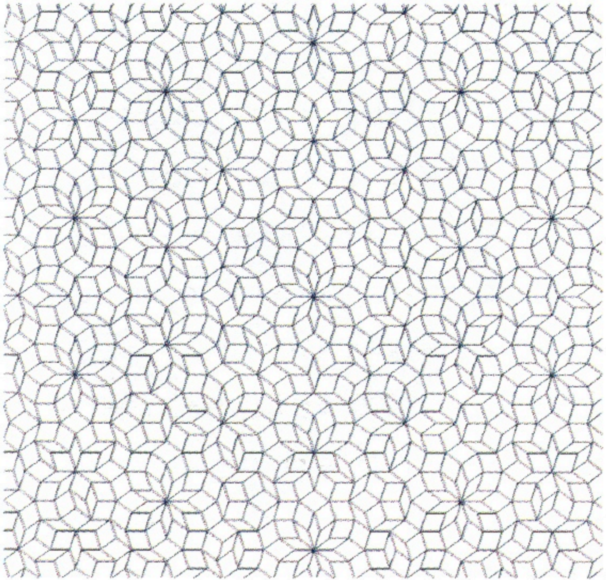


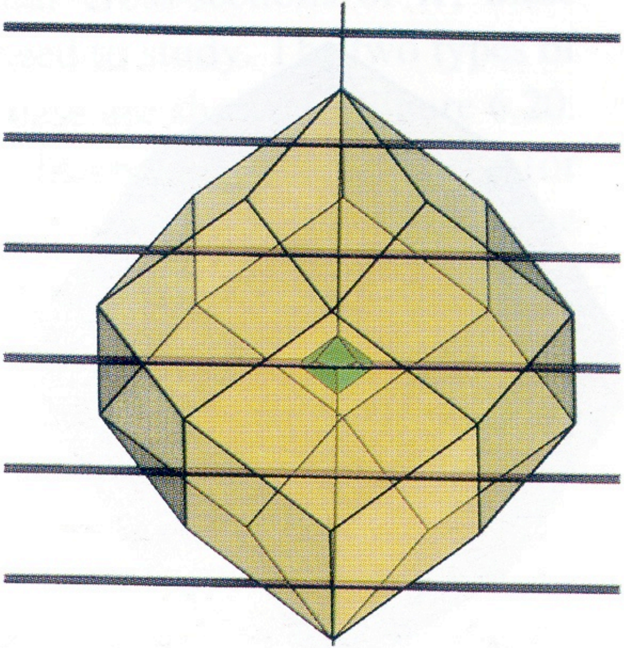


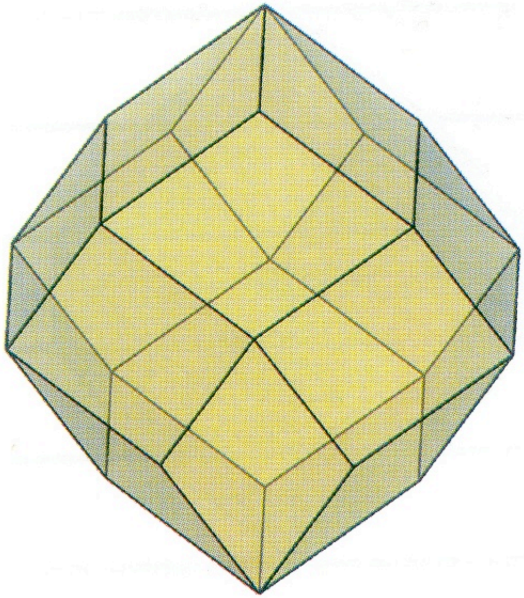


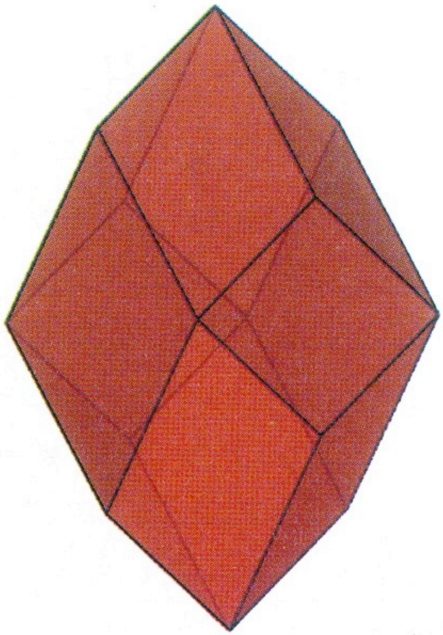

(a)
(b)
(c)
(d)

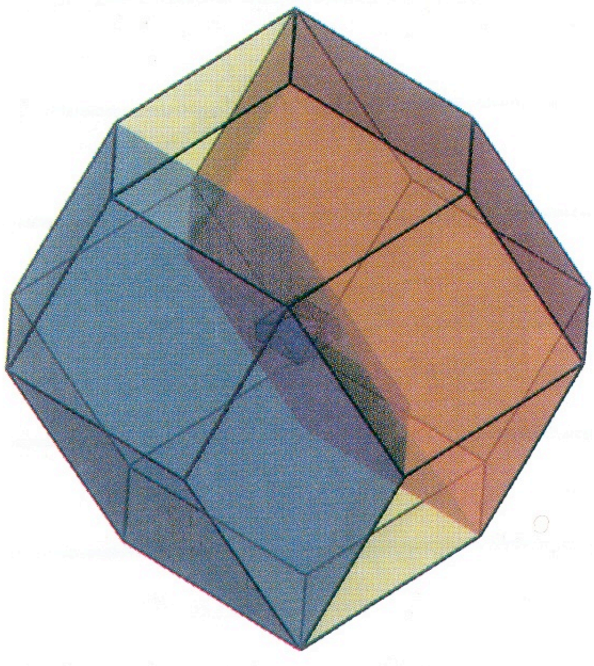


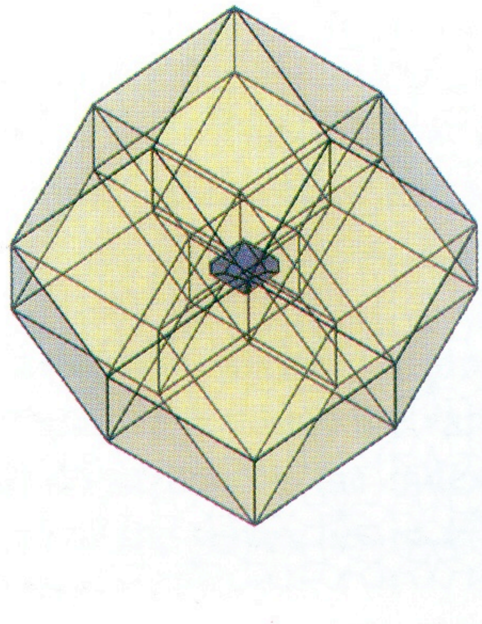


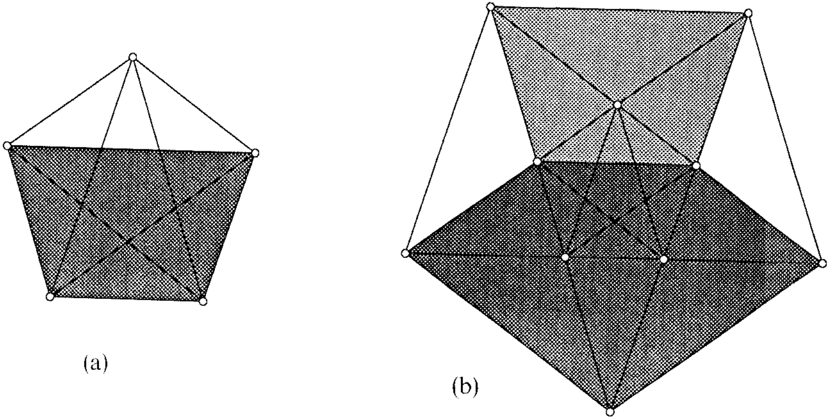








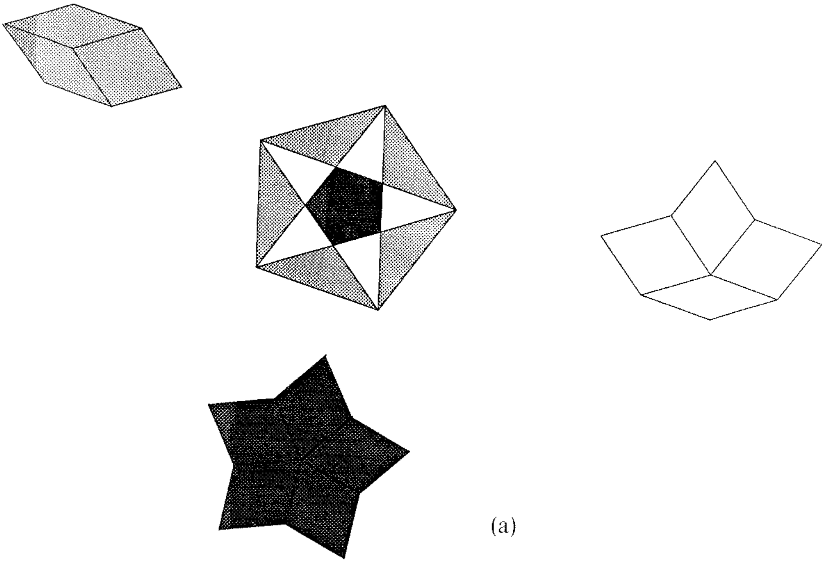




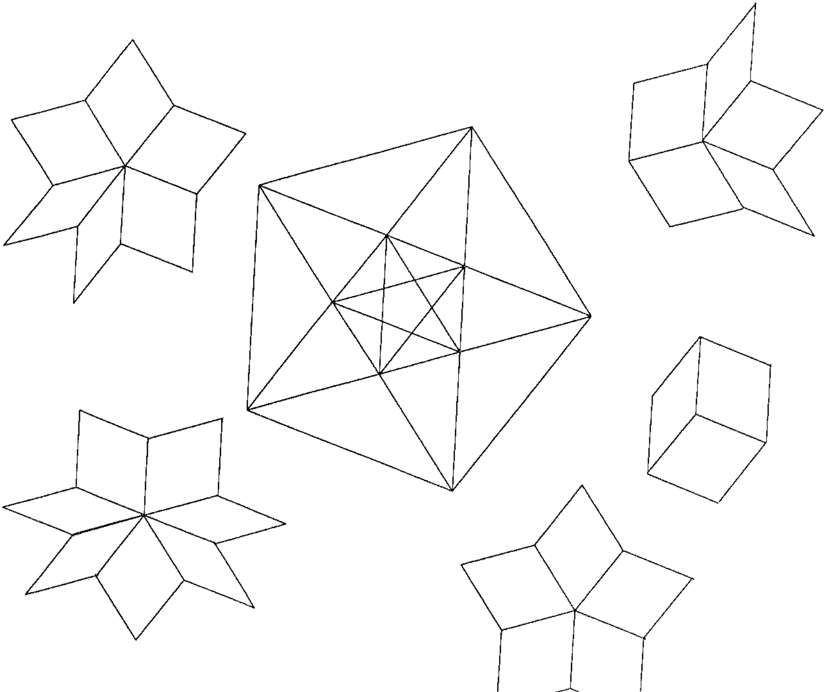
(a)

(b)

Fig. 6.20 The Penrose cross-sections of K. (a) Level 1. The shaded region is a section of one of the five dodecahedra that share the vertex at level 0. (b) Level 2. The darker region is the section of the same dodecahedron as in (a); the lighter region is the section of a dodecahedron with a vertex at level 5. (These are the blue and red dodecahedra of Plate 2.)



(a)



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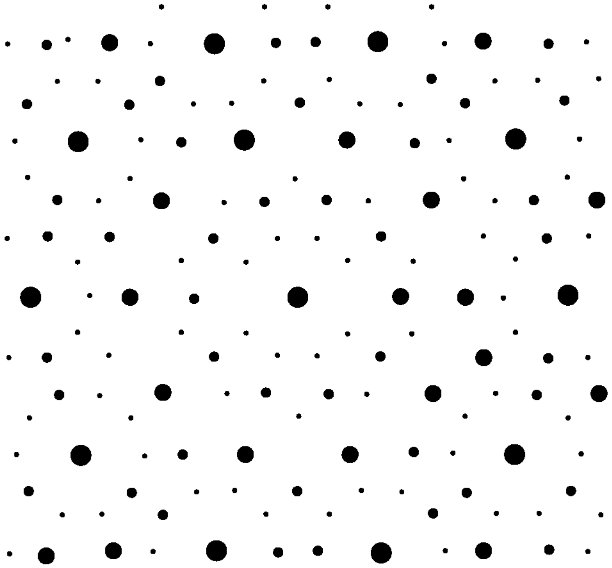

Fig. 4.5. The diffraction pattern of the Penrose tiling. The radius of the spots is proportional to the intensity. The pattern has ten-fold symmetry.

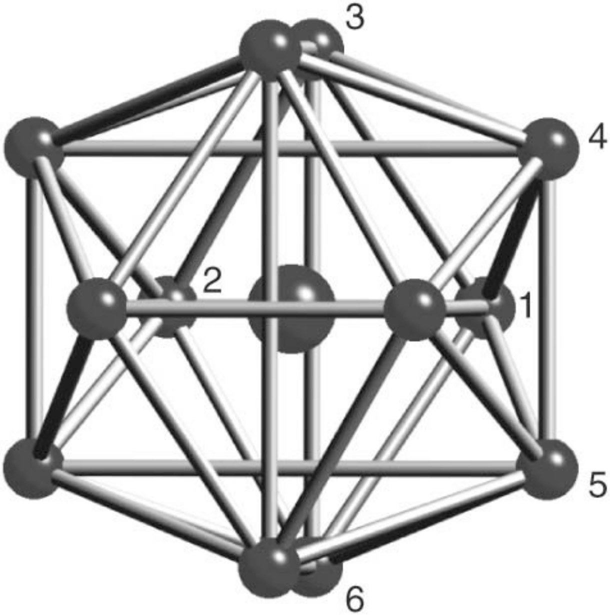

Fig. 1.13. The six basis vectors of the icosahedral Fourier module (1,..,6) and their inverses form the vertices of an icosahedron. The twelve point to the faces of a dodecahedron. They form three mutually perpendicular rectangles with edge ratio τ $(\pm 1, \pm 2;\ \pm 3, \pm 6;\ \pm 4, \pm 5)$.