

Author index

Entries refer to chapter numbers.

- Abrahams, S. C., 1.2, 1.3, 1.4, 2.1, 8.1, 8.2, 9.1, 9.2, 12.4
 Altmann, S. L., 5.2
 Arnold, H., 5.1, 5.2
 Ascher, E., 8.2, 8.3
 Astbury, W. T., 2.2
 Aubert, J. J., 14.3
 Azároff, L. V., 9.1
- Baenziger, N. C., 14.3
 Belov, N. V., 1.2, 2.1, 2.2, 8.2, 9.1, 9.2
 Bertaut, E. F., 1.2, 2.1, 4.1, 4.2, 4.3, 8.2, 9.1, 9.2, 12.3, 13.1, 13.2
 Bhagavantam, S., 10.2
 Biedl, A. W., 2.2
 Billiet, Y., 1.3, 1.4, 8.1, 12.4, 13.1, 13.2, 15.1, 15.2
 Boisen, M. B. Jr., 8.3
 Boyle, L. L., 8.3
 Bravais, A., 9.1
 Brenton, A., 10.2
 Brown, H., 8.1, 8.2, 8.3
 Buerger, M. J., 1.2, 2.1, 2.2, 3.1, 8.2, 9.1, 9.2, 10.2, 12.2
 Bülow, R., 8.1, 8.2, 8.3, 9.1
 Burckhardt, J., 8.1, 9.1
 Burnett, M. N., 14.3
 Burzlaff, H., 2.2, 8.3, 9.1, 10.1, 12.1, 12.2, 12.3, 12.4, 14.1, 14.2, 15.1, 15.2
 Buttner, R. H., 15.3
- Capponi, J. J., 14.3
 Cassels, J. W. S., 9.3
 Catti, M., 3.1
 Chabot, B., 2.2
 Cochran, W., 3.1
 Coxeter, H. S. M., 10.1
- Delaunay, B. N., 9.1, 9.2, 9.3
 Deschizeaux-Cheruy, M. N., 14.3
 Dolbilin, N. P., 9.2
 Donnay, J. D. H., 1.2, 1.3, 1.4, 2.1, 2.2, 3.1, 8.1, 8.2, 9.1, 9.2, 10.1, 12.2, 12.4, 14.2
 Dougherty, J. P., 10.2
 Dunbar, W. D., 14.3
 Durif, A., 15.3
- Egorov-Tismenko, Ju. K., 2.2
 Eisenstein, G., 9.2, 9.3
 Engel, P., 2.2, 14.2
- Fedorov, E. S., 2.2, 8.3
 Ferraris, G., 3.1
 Fischer, W., 1.2, 1.3, 1.4, 2.1, 2.2, 8.1, 8.2, 8.3, 9.1, 9.2, 10.1, 11.1, 11.2, 12.4, 14.1, 14.2, 14.3, 15.1, 15.2, 15.3, 15.4
 Flack, H. D., 1.3, 8.1
 Friedel, G., 2.2, 10.1
 Friedel, M. G., 3.1
- Galiulin, R. B., 1.3, 1.4, 8.1, 12.4
 Galiulin, R. V., 9.2, 15.4
 Gelato, L. M., 2.2, 15.1, 15.2
 Giacovazzo, C., 8.1, 8.2
 Gibbs, G. V., 8.3
 Glazer, A. M., 1.3, 1.4, 8.1, 12.4
 Gramlich, V., 8.3
 Groth, P., 10.1
 Gruber, B., 9.2, 9.3
 Grünbaum, B., 14.3
 Gubler, M., 15.1, 15.2, 15.4
- Hahn, Th., 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 8.1, 8.2, 9.1, 9.2, 10.1, 10.2, 12.4
 Harker, D., 3.1
 Heesch, H., 2.2, 12.1
 Hellner, E., 2.2, 10.1, 14.1, 14.2, 14.3
 Hermann, C., 8.1, 8.3, 12.1, 12.3, 12.4, 14.1, 14.2, 15.2
 Herzig, P., 5.2
 Hilton, H., 2.2
 Hirshfeld, F. L., 8.3, 15.1
 Hobbie, K., 14.3
 Hoppe, R., 14.3
- Iglesias, J. E., 3.1
- Janner, A., 8.1, 8.2
 Janssen, T., 8.1
 Joesten, M. D., 14.3
 Johnson, C. K., 14.3
 Joubert, J. C., 14.3
- Kennard, O., 3.1
 Klapper, H., 10.1, 10.2
 Koch, E., 2.2, 3.1, 8.3, 11.1, 11.2, 14.1, 14.2, 14.3, 15.1, 15.2, 15.3, 15.4
 Koptsik, V. A., 1.2, 2.1, 8.1, 8.2, 9.1, 9.2, 10.1, 12.1, 12.3
 Křivý, I., 9.2
 Kurtz, S. K., 10.2
- Langlet, G. A., 2.2
 Laves, F., 15.3
 Lawrenson, J. E., 8.3, 14.2
 Ledermann, W., 8.1, 8.3
 Lenhert, P. G., 14.3
 Lima-de-Faria, J., 8.1
 Lipson, H., 3.1
 Litvinskaja, G. P., 2.2
 Loeb, A. L., 14.3
 Looijenga-Vos, A., 2.1, 2.2, 3.1, 8.1
 Love, W. E., 9.1
- Mackay, A. L., 1.2, 2.1, 8.2, 9.1, 9.2
 Maslen, E. N., 15.3
 Masse, R., 15.3
 Matsumoto, T., 2.2, 8.3, 14.2
 Mauguin, Ch., 12.1
 Megaw, H. D., 5.2
 Melcher, R. L., 10.2
 Mighell, A. D., 9.2
 Minkowski, H., 9.1
 Morimoto, N., 2.2
 Morss, L. R., 14.3
 Müller, U., 15.1, 15.2
- Naor, P., 14.3
 Nesper, R., 14.3
 Neubüser, J., 8.1, 8.2, 8.3, 9.1, 11.2
 Nieuwenkamp, W., 5.2
 Niggli, A., 10.1, 14.2, 14.3
 Niggli, P., 2.2, 8.3, 9.2, 9.3, 10.1, 14.1
 Nowacki, W., 10.1
 Nye, J. F., 10.2
- Ondik, H. M., 9.1
 Opgenorth, J., 8.1
- Parthé, E., 2.2, 15.1, 15.2
 Patterson, A. L., 9.1
 Perez-Mato, J. M., 3.1
 Pertlik, F., 14.3
 Phillips, F. C., 10.2
 Plesken, W., 8.1
- Reinhardt, A., 14.3
 Rodgers, J. R., 9.2
 Rogers, D., 10.2
 Rolley Le Coz, M., 13.1, 13.2
 Rundle, R. E., 14.3
- Sadanaga, R., 2.2
 Sakamoto, Y., 14.3
 Santoro, A., 9.2
- Schiebold, E., 2.2
 Schnering, H. G. von, 14.3
 Schoenflies, A., 8.3, 12.1
 Schulz, T., 8.1
 Schwarzenberger, R. L. E., 8.1, 9.1, 15.3
 Selling, E., 9.1
 Senechal, M., 1.3, 1.4, 8.1, 12.4
 Shephard, G. C., 14.3
 Shiren, N. S., 10.2
 Shoemaker, D. P., 1.3, 1.4, 8.1, 12.4
 Shubnikov, A. V., 8.1, 10.1, 12.1, 12.3
 Smaalen, S. van, 8.1
 Smirnova, N. L., 14.3
 Snow, A. T., 14.3
 Sohncke, L., 8.3
 Souvignier, B., 8.1
 Sowa, H., 14.3
 Steinmann, G., 2.2, 14.2
 Stogrin, K. I., 9.2
- Takagi, S., 14.3
 Takahasi, U., 14.3
 Takeuchi, Y., 2.2
 Templeton, D. H., 2.2
 Tordjman, I., 15.3
 Trotter, J., 9.1
- Vainshtein, B. K., 8.1, 10.1
 Vasserman, E. I., 14.3
 Vincent, H., 14.3
- Weissenberg, K., 14.2
 Wilson, A. J. C., 1.2, 1.3, 1.4, 2.1, 3.1, 8.1, 8.2, 9.1, 9.2, 12.4
 Wilson, A. S., 14.3
 Wolff, P. M. de, 1.2, 1.3, 1.4, 2.1, 8.1, 8.2, 9.1, 9.2, 9.3, 12.4
 Wondratschek, H., 1.2, 1.3, 1.4, 2.1, 2.2, 8.1, 8.2, 8.3, 9.1, 9.2, 11.2, 12.4, 14.2
 Wooster, W. A., 10.2
 Wyckoff, R. W. G., 5.2
- Yamamoto, A., 8.1
 Yardley, K., 2.2
- Zagal'skaja, Ju. G., 2.2
 Zalgaller, V. A., 9.2
 Zassenhaus, H., 8.1, 8.2, 8.3
 Zimmermann, H., 8.3, 9.1, 10.1, 12.1, 12.2, 12.3, 12.4, 14.1, 15.1, 15.2

Subject index

Entries in bold refer to pages on which a topic is defined or given extended treatment.

- Absences, systematic (space group) and structural (non-space group), **29**, 32, **44**, 46, 832
- Abstract point groups, 762
- Activity, optical, 804–806
- Additional symmetry elements, **56**, 61–62, 71, 74–75, 831
- Affine
- equivalence classes, 720
 - group, 902, 904
 - normalizers, 733, **739**, 846, 878–879, **882**, 899–900, 904
 - space-group type, 726–727
 - transformation, 78
- Anomalous dispersion, 53, 902
- Anorthic (triclinic) system, 15
- Arithmetic crystal class, 727
- Aspect, morphological, 44
- Asymmetric unit, 25
- Augmented matrix, 78–79, 86, **721**
- Auslöschungen* (reflection conditions), 29
- Automorphism group, 37, 878
- Axes
- of order infinity, 796
 - of rotation and rotoinversion, **5**, 724, 796–797, 804, 806, 811
 - of rotoreflexion, 797, 804
- Basic crystal and point form, **765**, 791
- Basis
- crystallographic, conventional, primitive, **14**, **723**, 732, 742–743, 745, 753
 - of a lattice, 742–743
 - reduced, 40, 742, **750**, 756
 - vectors, transformation of, 78
- Biaxial crystals, 806
- Bivariant lattice complex, 848
- Blickrichtung* (symmetry direction), **18**, 44, **818**, 819
- Bravais
- class, 728
 - flock, 729
 - (type of) lattice, **14–15**, 720, **728**, **744**, 753, 757
- Bravais–Donnay–Harker principle, 805
- Bravais–Miller indices, 32
- Buerger cell, 750, **756**
- with maximum deviation, 756
 - with maximum surface, 756
 - with minimum deviation, 756
 - with minimum surface, 756
- C and c cell (tetragonal and hexagonal lattices), 36, 61, 71, 73, 833
- Cell
- centred and primitive, **4**, 14, 29, **743**
 - choice, monoclinic, 17, 19–20, **38–39**, 45–46, 62–63
 - conventional, **14**, 44, **743**, 757
 - decentring of, 35–36, 72, 74
 - deviation of, 756
 - parameters, 14–15, 33, 723
 - reduced, 20, 40, 742, 750
 - symbols, choice of, 62
- Central part, lattice complexes, 871
- Centre of symmetry (of inversion), 56–59, 811–812
- Centred cell and lattice, **4**, 14, 26, 29, **743**
- Characteristic
- crystal and point form, 764–765
 - space group, 848
 - (Wyckoff) position, **848**, 850–851, 870–871
- Cheshire groups, 878
- Chirality, 804
- Circle group, 904
- Circular point groups, 797–798
- Classes of general point groups, 796
- Column part of a symmetry operation (motion), **721**, 836
- Components of a set, 756
- Comprehensive lattice complex, 848
- Conditions for conventional cells, 757
- Conditions limiting possible reflections, 29
- Conjugate
- elements, 738
 - subgroups, 28, **738**, **795**, 802–803, 902
- Conventional basis, cell, coordinate system and origin, **14–15**, 17, 24–25, 36, 44, **732**, **743**, 753, **757–758**
- Conventional characters, 757–758
- Convex sets of Niggli images, 756
- Coordinate system
- conventional and crystallographic, **14–15**, 36, 730, **732**
 - transformation of, **78**, 87
- Coordinates and coordinate triplets
- of a point, **27**, 35, 766, 797, 810, 813
 - of a point, transformation of, 79
- Coset and coset decomposition, **724**, 738
- Covariant and contravariant quantities, 79
- Crystal
- class, 14, 728, **762**, 794–795, 805
 - class, arithmetic and geometric, 720, **727–728**
 - family, **14–15**, **729**, 745, 870–871
 - forms, **763–764**, 766, **768**, **770**, **791**, 797, 800, 846, 848
 - pattern, 722
 - space, 720
 - structures, equivalent description of, 900
 - structures, relations between, 873
 - system, **14**, 730, 762–763, 806
- Crystallographic
- basis, coordinate system and origin, **14**, **723**, **742–743**, 901
 - face, crystal and point forms, 791
 - orbit, 28, **733**, 764, 846, 900
 - point groups, **762–763**, 768, **770**, 818, 904
 - space-group type, 727
 - symmetry operation, **723**, 810, 812–813
- Cubic
- point groups, 15, **786**, 799, 819
 - space groups, 18–19, 23–24, 69, 75, 824
 - stereodiagrams, 24
- Cylindrical point groups, 797, **799**
- D cell (hexagonal lattice), 15, **73**, 82
- Decentring of a cell, 35–36, 72, 74
- Degrees of freedom, for lattice complexes, 848, 871
- Delaney reduction and sorts, 745, 757
- Derivative lattices, 843–844
- Deviation of a cell, 756
- Diffraction
- enhancement, 46
- Diffraction
- multiple, 45
 - symbols, 44, **46**
- Dipole moment, 807
- Direct space, 720
- Direction indices, transformation of, 79
- Dirichlet domain, 742, 873
- Dissymmetry, 804
- Distribution symmetry, 871
- Domain of influence, **742**, 745
- Dual polyhedra, 763, 767
- e* glide plane, **7–8**, 59
- Edge form, pole and symmetry, 766, 768, 797–798
- Eigensymmetry* (inherent symmetry)
- of crystal and point form, **764**, 766, **791**, 804
 - of orbit, 900
- Eisenstein–Niggli reduction, 745
- Electric moment, 807
- Enantiomerism, 804
- Enantiomorph, selection of, 902
- Enantiomorph
- screw axes, 6
 - space groups, 35, 53, **727**, 836
 - spheres, 807
- Enantiomorphism, 799, 804–805
- Enhanced symmetry of Euclidean normalizers, 880–881
- Equivalent
- descriptions of crystal structures, 900
 - lists of structure factors, 901
 - point configurations, 900
 - subgroups and supergroups, 902
 - Wyckoff positions, 900
- Etch figures and pits, 805
- Euclidean
- group, 902, 904
 - normalizers, **739**, **878–879**, 881–883, 895, 900, 904
 - normalizers, enhanced symmetry, 880–881
 - space, 721
- Extended Hermann–Mauguin space-group
- symbols, 6, 19, **61–63**, 69–71, 73, 75, 831
- Extinction symbols, 44–46
- Extinctions, 29, 832
- Extremal principles, 756
- F* cell (tetragonal lattice), 66, 71
- Face form, pole and symmetry, **763–764**, 766, 770, **791**, 798–800, 805
- Family, crystal, 14–15, 729, 744, 870–871
- Ferroelectricity, 807
- Fixed point of a symmetry operation (motion), **722**, 810, 812
- Fourier synthesis, asymmetric unit, 26
- Friedel’s rule, 44, 51, 762, 902
- Genera, 757
- General
- class, 796
 - face and point, **762–764**, 797
 - form (crystal, face and point), **763–765**, 768, 770, 791, 798, 800
 - point groups, 762, **796**, **798**, 800, 802–803, 904
 - position, 26–27, **28**, 725, **732**, 764, 810

SUBJECT INDEX

- General
 position, diagrams of, 23
 reflection conditions, 29
 system, 796
- Generalized symmetry, 720, 832
- Generating point group, 764, 791
- Generators of a group, **27**, **736**, 766, 819, 821–823
- Geometric crystal class, **728**, 762
- Gitterkomplex* (lattice complex), 846
- Glide
 line, plane and vector, **5–8**, 19, 30–31, 39, 724, 811, 813, 821
 part of a symmetry operation (motion), **724**, 810–811, 813, **821**, 822, 825
 reflection, **5–6**, **722**, 810–811, 813
- Graphical symbols, 7–10
- Grenzform* (limiting form), 765
- Group–subgroup degradation, 874
- Group–subgroup relations, 734
- Grundform* (basic form), 765
- H* and *h* cell (hexagonal lattice), **4**, 29, 31, 34, 36, **73**, 82, 833
- Hemihedry, 762
- Hermann–Mauguin
 plane-group symbols, 17–18, **61**
 point-group symbols, 6, 763, 791, 797–799, **818–819**
 space-group symbols, 6, 17, **18**, 21, 38, 40, **62**, **821**, 823–824
 space-group symbols, extended, 6, 19, **62–63**, 69–71, 73, 75, 831
 symbols, changes of, 19, 61–62, 69–71, 73, 75, 833
- Hexagonal
 axes, cell and coordinate system, 4, **14–16**, 81, 763
 Bravais system, 14–15, 730
 crystal system and crystal family, 15
 plane groups, 61
 point groups, 15, 769, **782**, 819
 space groups, 18, 23, 68, 73, 824
- Holohedry and holohedral point group, 15, **728**, 743, **762**, 763, 796
- Icosahedral point groups, 797, **800–801**, 802
- Incommensurate phases, 720
- Index of a subgroup and supergroup, 35–36, **795**, 836, 843, 902
- Index of a sublattice, 759
- Indicators of a group, 819, 822
- Indicatrix, optical, 806
- Inherent symmetry (*eigensymmetry*)
 of crystal and point form, **764**, 766, 791, 804
 of orbit, 900
- Integral reflection conditions, 29
- Intensity distributions, 53
- International space-group symbols, 17–18, 794, 818–819, 822–823
- Intersection parameter, 823
- Intrinsic glide part of a symmetry operation, 724
- Intrinsic screw part of a symmetry operation, 724
- Intrinsic translation part of a symmetry operation, **724**, 810, 813
- Invariant lattice complex, 848, 870
- Invariant (normal) subgroup, **724**, 738, **795**
- Invariants of a transformation, 86
- Inversion, **722**, 815–816
 centre, **5**, 9, 56–59, 811–812
- Inversion
 point of a rotoinversion, 724, 813
- Isomers, optical, 804
- Isometric mapping and isometry, 721
- Isometry group
 of the circle, 904
 of the sphere, 904
- Isomorphic subgroups and supergroups, **36–37**, 62, 735, **836–838**
- Isomorphism of point groups, 762
- Isomorphism type of space groups, 726
- Isosymbolic groups, 836
- Isotropic crystals, 806
- Klassengleiche* (*k*) subgroups and supergroups, **35**, 56, 62, 70, 72, 74–75, **735**, 831, 836
- Kugelgruppe* (sphere group), 799
- Lagesymmetrie* (site symmetry), 28
- Lattice
 basis, 742–743
 centred and primitive, 14, 29, **723**
 characters, **753–754**, 756
 complexes, **846**, 848, 850–851, 873
 complexes, descriptive symbols for, **849**, 870, 872–874
 complexes, reference symbols for, 848
 constants, 723
 derivative, 843–844
 parameters, 14, 723, 743
 point symmetry, 15, **728**, 762, 795
 symmetry directions, **18**, 44, **818**, 819
 system (Bravais system), 14, 730–731
 topological properties of, 742
 type (Bravais type), **14–15**, **728**, **744**, 753, 757
- Laue class, group and symmetry, 15, 19, 44, 46, 762–763, 805, 902
- Limiting
 crystal and point form, 763, **765**, 767, 791, 800, 848–849
 lattice complex, **848**, 873
- Line (one-dimensional) groups and lattices, 4, 15, **40**, 724
- Linear
 mapping, 722
 part of a motion or transformation, 78, **721**
- Location
 of a symmetry element, 56–59, 810, 813
 part of a symmetry operation (motion), 810, 813, **821**, 823
- Mapping, linear, 722
- Matrices for point-group symmetry operations, 766, 802, 815–816
- Matrices for unit-cell (basis) transformations, 80
- Matrix
 augmented, 85, **721**
 notation of symmetry elements, 810–816
 of metrical coefficients (metric tensor), 85, 87, **742**, 745
 part of a symmetry operation (motion), **721**, 810, 812–813, 836
 representation of a symmetry operation, 26, 763, **810**, 812–813, 821
- Maximal subgroups, 35–36, **734**, 795–796, 802–803, 836
- Merohedry, 762
 twinning by, 45
- Metric tensor (matrix of metrical coefficients), 85, 87, **742**, 745
- Metrical conventions for labelling of axes, 40, 742
- Metrics in point and vector space, 721
- Miller indices, 763, 766, 768, 770, 797
 transformation of, 78–79, 902
- Minimal supergroups, 35, 37, **735**, 795–796
- Mirror line, plane and point, **5**, 40, 811
- Missing spectra, 29
- Monoclinic
 crystal system, 15
 point groups, 15, **770**, 819
 settings and cell choices, 15, 17, 19–20, **38**, 45–46, 62–63, 80, 833
 space groups, 17–20, **38**, 45–46, 62–63, 824
- Morphological aspect, 44
- Morphology, 804
- Motion, 721
- Multiple diffraction, 45
- Multiplicity
 of a crystal (face) form or of a point form, **764**, 797
 of a Wyckoff position, **27**, 766
- n*-Dimensional crystallography, 720
- Neumann's principle, 804
- Niggli cell, 756
- Niggli images, 756
 convex sets of, 756
- Niggli point, 756
- Non-characteristic
 crystal and point form, 764–765
 orbit, 32, 849
- Non-crystallographic point groups, 762, **796**, 904
- Non-isomorphic subgroups and supergroups, **35**, **37**, 62, 70, 836
- Normal subgroup, **724**, 738, **795**
- Normalizers
 affine and Euclidean, 733, **739**, 878, **879**, 881–883, 895, 899–900
 of a group, definition of, 739, 878
 of plane groups, 878, **879**, 881–882
 of point groups, 765, **904**
 of space groups, 37, **738**, 878, **879**, 882–883, 895, 899–900
- Oblique plane and point groups, 61, 768
- Obverse setting of *R* cell, **4**, 17, 23, 29, 37, 52, 73, 81–82, 84
- Ogdohedry, 762, 795
- One-dimensional (line)
 groups and lattices, 4, 15, **40**, 724
 symmetry elements and operations, 5, 9, 40
- Optical
 activity and optical properties, 804–806
 isomers, 804
- Orbit
 crystallographic, 28, **733**, 764, 846, 849, 900
 inherent symmetry (*eigensymmetry*) of, 900
 non-characteristic, 32, 849
- Order of a point group, 762, 764, 795–796, 798–799, 802
- Oriented face- and site-symmetry symbol, **28**, 766, 791, 800
- Origin, conventional and crystallographic, 14, 17, **24–25**, 732
- Origin shift (transformation), 78, 823
 permissible, 901
- Orthohexagonal *C* cell, **74**, 81, 833
- Orthorhombic
 crystal system, 15
 point groups, 15, **771**, 819

SUBJECT INDEX

- Orthorhombic
 settings, **20**, 44, 59, 838
 space groups, 18, 20–21, 47, 64, 68, 824
- Parity classes of reflections, 902
 Parity conditions, 839
 Patterson symmetry and function, 19–20
 Patterson syntheses, 53
 Phase transitions, 874
 Physical properties and symmetry, 804
 Piezoelectricity and piezoelectric classes, 804–805, 807
 Plane (two-dimensional) lattices, nets and cells, 4, 15, 844
 Plane (two-dimensional) space groups, 14, 18–19, 20, 31, 61, **724**, 837
 lattice complexes of, 850
 normalizers of, **879**, 881–882
 symbols for, 17–19, 61
 symmetry directions, 18
 symmetry elements and operations, 5, 7, 9
- Point
 configurations, **846**, 849
 configurations, geometrical properties, 873
 forms, **763–764**, 766, **768**, **770**, **791**, 797–800
 lattice, 723
 position, 27, 846
 space, 720
 symmetry (of a lattice), 15, 28, **728**, 762, 795
- Point groups
 and physical properties, 804
 crystallographic, **762–763**, 768, **770**, 818, 904
 definition of, **724–725**, 728, 732, 762
 determination from physical properties, 804
 diagrams and tables of, 762–763, **768**, **770**, 800
 general and non-crystallographic, 762, **796**, 904
 normalizers of, 765, **904**
 one-dimensional, 15, 40
 subgroups and supergroups of, **795**, 802–803
 symbols for, 15, 762–763, 798, **818**
 symmetry elements and operations of, 5, 7, 9, 815–816
- Polar axis, direction and point group, 804, 806–807
- Pole, edge and face, 763–766, 768, 770, 791, 797–800, 805
- Polyhedron and polygon (crystal and point form), 763, 765
- Position
 general and special, 23, 26, **27–28**, 725, **732**, **764**, 766, 810
 vectors, transformation of, 79, 87
- Positive affine space-group type, 727
- Possible space groups, 45–46
- Primitive basis, cell and lattice, 4, 14, 26, 29, 723, **743**, 745, 843
- Printed symbols, 2, 4–5
- Priority rule, 39, 59
- Projection
 of a centred cell (lattice), 34
 of a symmetry element, 34
- Projection symmetry
 of a point group, 768, 770, 800
 of a space group, 17, **33–34**
- Projections, stereographic, of point groups, **763**, 768, 770, 800
- Proper affine space-group type, 727
- Proper subgroup, 734
- Punktlage* (position), 27, 846
- Punktsymmetrie* (site symmetry), 28
- Pyroelectricity and pyroelectric classes, 804–805, 807
- Quasicrystals, 720
- R* cell (rhombohedral lattice), **4**, 17, 23, 37, **73**, 81–82, 84
- Realization of a limiting crystal form, 765, 795
- Reciprocal lattice, 766
- Rectangular plane and point groups, 61, 768
- Reduced basis and cell, 20, 40, 742, **750**, 756
 main conditions, 750
 special conditions, 750–751
- Reduced form, 750
- Reflection conditions, **29**, **44**, 46, 832, 873
- Reflection (mirror reflection), 5, 722
 line, plane and point, 5, 7–9, 40, 811
- Refraction, 806
- Reverse setting of *R* cell, **4**, 17, 29, 37, 52, 73, 81, 84
- Rhombohedral
 axes, cell, coordinate system and lattice, 4, **14–16**, 29, 81–82, 84, 763, 836
 lattice (Bravais) system, 14, 16–17, **730**
 space groups, 4, 14, 17–18, 23, 29, 68, 824, 837
- Rotation and rotoinversion, **5**, **722**, 810–811
 axes and points, **5**, 9–10, 724, 796–797, 804, 806, 811–812
 sense of, 6, 810–813
- Rotation part of a symmetry operation (motion), **721**, 810, 812–813, **821**, 836
- Rotoreflexion axes, 797, 804
- S* centring, 4, 15, 743
- Schoenflies
 point-group symbols, 763, 794, 797–799, **818**
 space-group symbols, 17, 63, **821**, 824
- Screw
 axes and vectors, **5**, 9–10, 30–31, 724, 810, 812–813
 part of a symmetry operation (motion), **724**, 810, 812–813, **821**, 822, 825
 rotation, **5**, **722**, 810, 812–813, 821
- Second-harmonic generation, 805, 807
- Seitz symbol, 721
- Selling–Delaunay reduction, 745
- Sense of rotation and rotoinversion, 6, 810–813
- Serial reflection conditions, 30–31
- Settings
 monoclinic and orthorhombic, 17, **20**, **38**, 44–47, 62–64, 68, 80, 833, 836
 rhombohedral, obverse and reverse, **4**, 17, 29, 52, 81–82
- Shift of origin, 78, 87–88
- Shift vector, lattice complexes, 871
- Shubnikov
 point-group symbols, 818–819
 space-group symbols, 821, 824
- Site-set symbol, 871
- Site symmetry, **28**, **732**, 764–766, 791, 797, 800, 846
- Space-group type
 affine, 726–727
 crystallographic, 727
 positive affine, 727
 proper affine, 727
- Space groups
 changes of, 833
 classification of, 14, 726
 definition of, 724, 726
 determination of, **29**, **44**, 46, 51
- Space groups
 diagrams of, 17, **20**
 enantiomorphic, 35, 53, **727**, 836
 incorrect assignment of, 874
 isomorphism type, 726
 lattice complexes of, 851
 normalizers of, 37, **738**, **879**, 882–883, 895, 899–900
 one-dimensional (line groups), 15, **40**
 subgroups and supergroups of, **35–38**, 56, 62, **734**, **836**, 843, 902
 symbols, changes of, 19, 62
 symbols for, 17, **18**, 38–40, **821**, 823–824
 symmorphic, 19, **725**, 727
 two-dimensional (plane groups), 15
- Special
 face and point, 764
 form (crystal, face and point), 763, **764**, 766, 791, 800
 position, **28**, **732**, 764
 reflection conditions, **29**, 32
- Specialized metric, Euclidean normalizers, 879, 881
- Sphere group, 799, 904
- Sphere packings, 873
- Spherical point groups, 797, **799**, 802
- Square plane and point groups, 61, 768
- Stereodiagrams, cubic, 24
- Stereographic projections of point groups, **763**, 768, 770, 800
- Structural (non-space-group) absences, 32
- Structure factors, equivalent lists of, 901–902
- Subgroups and supergroups
 affine and Euclidean (normalizer)
 equivalent, 902
 conjugate, 28, **738**, **795**, 802
 definition of, 734
 index of, 35–36, **724**, **795**, 836, 843
 isomorphic and non-isomorphic, **35–38**, 62, 70, 735, **836**
 isosymbolic, 836
klassengleich (*k*), **35**, 56, 62, 70, 72, 74–75, **735**, 831, 836
 maximal (subgroups), 36, **734**, 795–796, 802–803, 836
 minimal (supergroups), 37, **735**, 795–796
 normal or invariant (subgroups), **724**, 738, **795**
 of point groups, 795–796, 802–803
 of space groups, **35–38**, 56, 62, **734**, 836, 843, 902
 proper, 734
translationengleich (*t*), **35**, 56, 62, 71–72, 74–75, **735**, 796
- Sublattices
 index of, 759
 number of, 759
- Subperiodic groups, 720
- Symbols
 for Bravais (types of) lattice, 14–15
 for centring types (modes) of cells, **4**, 39
 for crystal families, 14–15
 for lattice complexes, 848
 for line (one-dimensional) groups, 4, 15, 40
 for Patterson symmetries, 20
 for plane (two-dimensional) groups, 4, 15, 17–18, 61
 for point groups and crystal classes, 15, 762–763, 794–795, 798, 800, **818–819**
 for site and face symmetries, **28**, 768, 770, 791, 797, 800

SUBJECT INDEX

- Symbols
 for space groups, 17, **18**, 40, 62–63, **821**, 823–824
 for space groups, changes of, 19, 62, 70–71, 75, 833
 for symmetry elements and operations, **5**, **7**, 763, 810, 812–813
- Symétrie ponctuelle* (site symmetry), 28
- Symmetrische Sorten*, 744, 745, **748**, 749, 757
- Symmetry
 axes, centre, lines and planes, **5**, 7–9, 763, 796, 810
 directions, **18**, 44, **818**, 819, 833
 elements, additional, **56**, 61–62, 71, 74–75, 831
 elements, definition and symbols, **5–10**, 724, 818, 821
 elements, diagrams of, **7**, 20, 763
 enhancement of Euclidean normalizers, 880–881
 generalized, 720
 group, 722
 inherent (*eigensymmetry*), 764, 766, 791, 804
 non-crystallographic, 762, **796**, 798, 904
 of a Patterson function, 19
 of diffraction record, 762
 of physical properties, 804
 of sites (points), **28**, **732**, 764–766, 791, 797, 800
 of special projections, 17, **33**, 764
 operation, definition and symbols, **5–6**, **26–27**, **722**, 723, 810, 812–813, 815–816, 818, 821
 operation, matrix representation of, 26, 28, 763, **810**, 812–813, 821, 836
 operations, matrices for, 766, 802, 815–816
 operations, transformation of, 86
- Symmmorphic space group, 19, **725**, 727
- System
 crystal, lattice and Bravais, **14–15**, 44, **730**, 762–763
 general, 796
 lattice, 730–731
- Systematic (space-group) absences, **29**, 44, 832
- Tensor properties, 804, 807
- Tetartohedry, 762, 795
- Tetragonal
 crystal system, 15
 point groups, 15, **773**
 space groups, 18, 23, 50, 66, 71, 824
- Topological characteristic of lattice characters, 756
- Topological properties of lattices, 742
- Transformation
 affine, 78, 84
 invariants of, 86
 linear part of, 78
 of basis vectors and coordinate system, **78**, 87, 901
 of direction indices, 79
 of matrix of the geometrical coefficients (metric tensor), 87
 of Miller indices, 78–79, 902
 of origin (origin shift), 78, 87–88, 901
 of point coordinates, 79, 86
 of position vectors, 79, 87
 of symmetry operations (motions), 78, 86
 of unit cell, **78**, 901
- Translation
 and translation vector, 56–57, **722**, 810, 812
 part of a symmetry operation (motion), 721, **722**, 724, 810, 812, **821**, 823, 836
 subgroup of a space group, **724**, 744
- Translationengleiche* (*t*) subgroups and supergroups, **35**, 56, 62, 71–72, 74–75, **735**, 796
- Triclinic
 crystal system, 15
 point groups, **770**, 819
 space groups, 18, 20, 46, 62–63, 824
- Trigonal
 crystal system, 14, **15**
 point groups, 15, **776**, 819
 space groups, 14, 23, 52, 68, 73, 824
- Trivariant lattice complex, 848
- Truncation of a polyhedron, 767
- Twinning, 45, 806
- Two-dimensional (plane)
 lattice complexes, 850
 lattices, nets and cells, 4, 15, 61, 844
 point groups, 15, 763, **768**, **798**
 space groups, 14, 18, 20, 31, 61, **724**, 837
 space groups, normalizers of, **879**, 881–882
 space groups, symbols for, 18–19, 61
 symmetry directions, 18
 symmetry elements and operations, 5, 7, 9
- Type
 of lattice (Bravais type), 14–15, 728, 744
 of limiting crystal and point forms, 765
 of point group, 762
 of reduced cell, 20, 750
 of Wyckoff sets, **734**, 846
- Uniaxial crystals, 806
- Unique monoclinic axis, 17–18, 20, 38–39, 62–63
- Unit cell, **723**, 742
 transformation of, **78**, 901
- Univariant lattice complex, 848
- Vector
 glide and screw, **5**, 7–10, 30–31, **724**, 811
 lattice, 723
 part of a symmetry operation (motion), **721**, 810, 812
 set of a crystal structure, 19
 space, 721
- Voronoi domain and Voronoi type, 742, 744, 749, 751
- Weissenberg complexes, 849, 871
- Wigner–Seitz cell, 742
- Wirkungsbereich* (domain of influence), 742
- Wyckoff
 letter (notation), **27**, 733, 764, 766, 797
 position, **27**, **733**, **764**, 765–766, 846, 848–851, 870, 873, 901
 set, **733–734**, 846, 848, 850–851, 873, 901
- Zonal reflection conditions, **30**, 45