Table 2.2.6.1. *Numbers of distinct projections and different Hermann–Mauguin symbols for the orthorhombic space groups (space-group number placed between parentheses), listed according to point group as indicated in the headline*

Number of distinct projections	222	*mm*2	2/*m*2/*m*2/*m*
6 (22 space groups)		*Pmc*2_1 (26) *Pma*2 (28) *Pca*2_1 (29) *Pnc*2 (30) *Pmn*2_1 (31) *Pna*2_1 (33) *Cmc*2_1 (36) *Amm*2 (38) *Abm*2 (39) *Ama*2 (40) *Aba*2 (41) *Ima*2 (46)	*P* $2_1/m$ $2/m$ $2/a$ (51) *P* $2/n$ $2_1/n$ $2/a$ (52) *P* $2/m$ $2/n$ $2_1/a$ (53) *P* $2_1/c$ $2/c$ $2/a$ (54) *P* $2/b$ $2_1/c$ $2_1/m$ (57) *P* $2_1/b$ $2/c$ $2_1/n$ (60) *P* $2_1/n$ $2_1/m$ $2_1/a$ (62) *C* $2/m$ $2/c$ $2_1/m$ (63) *C* $2/m$ $2/c$ $2_1/a$ (64) *I* $2_1/m$ $2_1/m$ $2_1/a$ (74)
3 (25 space groups)	*P*222_1 (17) *P*2_12_12 (18) *C*222_1 (20) *C*222 (21)	*Pmm*2 (25) *Pcc*2 (27) *Pba*2 (32) *Pnn*2 (34) *Cmm*2 (35) *Ccc*2 (37) *Fmm*2 (42) *Fdd*2 (43) *Imm*2 (44) *Iba*2 (45)	*P* $2/c$ $2/c$ $2/m$ (49) *P* $2/b$ $2/a$ $2/n$ (50) *P* $2_1/b$ $2_1/a$ $2/m$ (55) *P* $2_1/c$ $2_1/c$ $2/n$ (56) *P* $2_1/n$ $2_1/n$ $2/m$ (58) *P* $2_1/m$ $2_1/m$ $2/n$ (59) *C* $2/m$ $2/m$ $2/m$ (65) *C* $2/c$ $2/c$ $2/m$ (66) *C* $2/m$ $2/m$ $2/a$ (67) *C* $2/c$ $2/c$ $2/a$ (68) *I* $2/b$ $2/a$ $2/m$ (72)
2 (2 space groups)			*P* $2_1/b$ $2_1/c$ $2_1/a$ (61) *I* $2_1/b$ $2_1/c$ $2_1/a$ (73)
1 (10 space groups)	*P*222 (16) *P*$2_12_12_1$ (19) *F*222 (22) *I*222 (23) *I*$2_12_12_1$ (24)		*P* $2/m$ $2/m$ $2/m$ (47) *P* $2/n$ $2/n$ $2/n$ (48) *F* $2/m$ $2/m$ $2/m$ (69) *F* $2/d$ $2/d$ $2/d$ (70) *I* $2/m$ $2/m$ $2/m$ (71)
Total: (59)	(9)	(22)	(28)

(lower right). The projected axes, the origins and the projection directions of these diagrams are illustrated in Fig. 2.2.6.5. They refer to the so-called 'standard setting' of the space group, *i.e.* the setting described in the space-group tables and indicated by the 'standard Hermann–Mauguin symbol' in the headline.

For each orthorhombic space group, *six settings* exist, *i.e.* six different ways of assigning the labels *a*, *b*, *c* to the three orthorhombic symmetry directions; thus the shape and orientation of the cell are the same for each setting. These settings correspond to the six permutations of the labels of the axes (including the identity permutation); *cf.* Section 2.2.16:

abc **ba$\bar{c}$** **cab** **$\bar{c}$ba** **bca** **a$\bar{c}$b**.

The symbol for each setting, here called 'setting symbol', is a short-hand notation for the transformation of the basis vectors of the

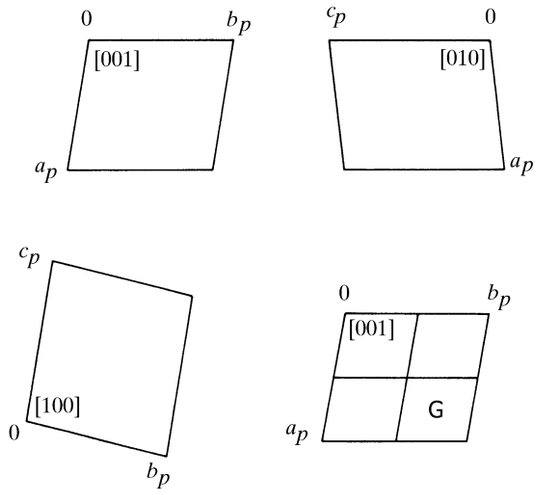

Fig. 2.2.6.1. Triclinic space groups (G = general-position diagram).

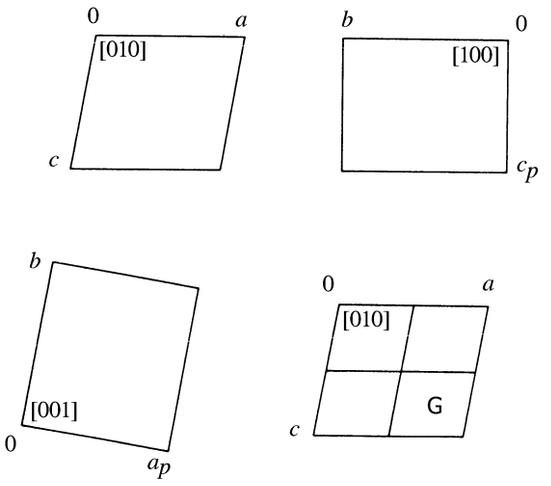

Fig. 2.2.6.2. Monoclinic space groups, setting with unique axis *b* (G = general-position diagram).

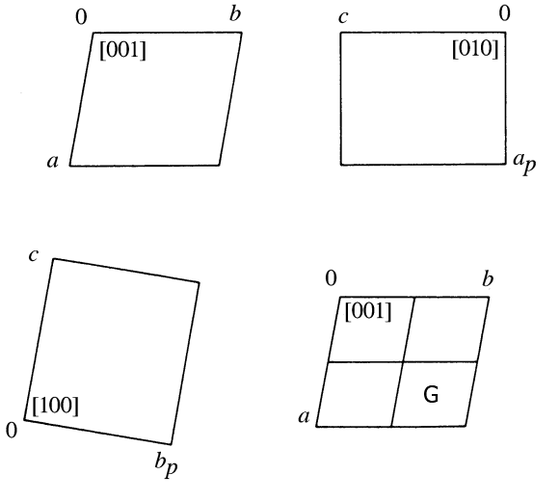

Fig. 2.2.6.3. Monoclinic space groups, setting with unique axis *c*.

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