

A modification of the stereographic projection.

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THE change suggested relates mainly to the representation of the faces below the plane of projection. I propose that every face below that plane shall be represented by the same point as a parallel face above it.

If the two parallel faces are equivalent they will both be indicated by the same circular dot (accompanied, if desired, by the indices of either face). If they are not equivalent and only one be present, it will be represented by a plus sign (+) if it be above the plane of projection, and by a minus sign with a dot in the centre (\ominus) if below it. If both are present but not equivalent, the double sign (\pm) will be used.¹

Under the present system parallel faces are represented by points on opposite sides of the centre and at equal distance from it, while faces symmetrically related to the plane of projection are represented by the same point. The former are of course more nearly related. Again, according to the present method the choice of the plane of projection determines whether any pair of faces are represented by one point; but if my proposal is adopted, the pairs of faces which are represented by the same points will be independent of the plane of projection.

The rationale of the new method will be at once understood when it is remembered that the stereographic representation of a face is really that of a line normal to it. If the two opposite parallel faces are equivalent the line is biterminal, the two opposite directions being equivalent. In other cases it is uniterminal, and the direction from the inside of the face to the outside may be considered as positive, and the reverse direction as negative.

Faces at right angles to the plane of projection will obviously be

¹ The suggestion of the dot in the centre of the minus sign to represent the exact position of the point is due to Mr. H. Hilton. This will be indicated by the point of crossing of the + where that symbol is used either alone or in conjunction with the minus sign.

represented by two points. If opposite parallel faces are equivalent, each point will represent both faces. If they are not equivalent and only one be present, the positive sign will be placed on the side on which the face occurs and the negative on the other; if both are present each point will have a double sign.

On the reading of this paper Dr. Herbert Smith stated that he had found it convenient to use a similar system in recording his results when working with the three-circle goniometer.

The illustrations represent crystals belonging to the spinel, tetrahedrite, calcite, and benitoite classes:—1a, 2a, 3a, and 4a according to ordinary stereographic projection, and 1b, 2b, 3b, and 4b according to the proposed modification.

