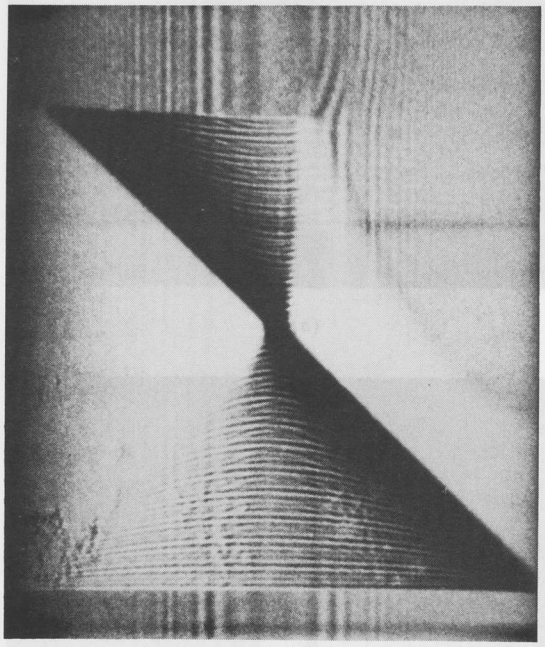
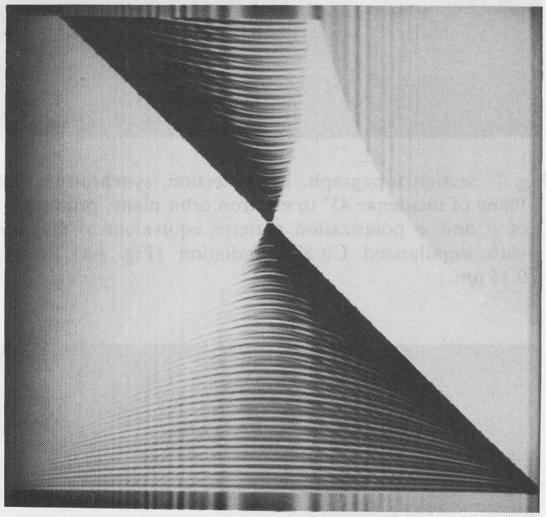
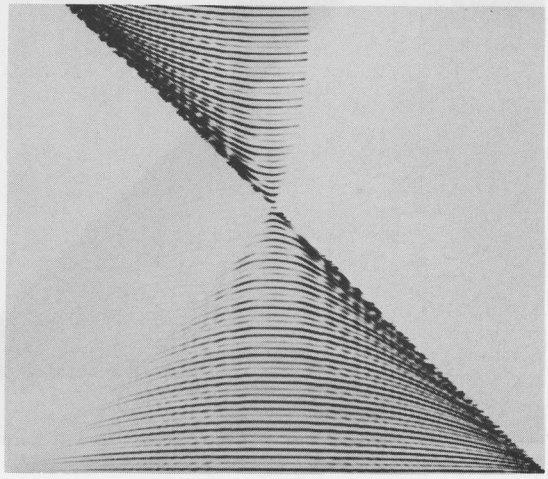
become most significant at the longest wavelengths used in the experiments, around 0·15 nm, and are illustrated in the set of topographs of Figs. 6(*a*)–9(*a*), Fig. 6(*a*) was taken with Cu $K\alpha_1$ radiation and shows the periodic variation in fringe visibility expected with an unpolarized X-ray source. The same pattern can be obtained with synchrotron radiation by rotating the plane of incidence to an inclination of 45° with the orbit plane (Fig. 7). With plane of incidence vertical, *i.e.* normal to the orbit plane, a pure σ-polarization pattern is obtained (Fig. 8). This may be contrasted with Figs. 9(*a*) and 10(*a*), which are pure π-polarization patterns like all the other synchrotron-radiation topographs reproduced here. Discussion of fringe periodicities and visibilities exhibited in Figs. 6(*a*)–10(*a*) will be taken up after considering how the differences in the domains on the topograph images occupied by the I_1, I_2 and normal *Pendellösung* fringe systems originate in this set. All the images are complicated as a consequence of the fault apex K being located well within the energy-flow triangle, and indeed the image geometry depends rather sensitively on the distance OA pertaining to the experiment. It happened that several different topographic experiments were performed between the taking of each of the four topographs, and in the case of the synchrotron experiments there was no time to complete the resetting of OA to a standard value before each exposure. The topographs betray some inconstancy in position of the beam entry point O. In Figs. 6(*a*), 7, 8 and 10(*a*) variation of the distance OA is within ±40 μm, but Fig. 9(*a*) was recorded with OA 210 μm greater than its average value in the other patterns of this set. However, two geometrical models can suffice for explaining the genesis of the curved boundaries of the I_1 and I_2 domains on all



(*a*)



(*b*)



(*c*)

Fig. 6. (*a*) Section topograph, $1\bar{1}1$ reflection, Cu $K\alpha_1$ radiation. Image width 0·7 mm. (*b*) Full simulation of (*a*). (*c*) Simulation of I_3 component only: positive values dark, negative values blank.