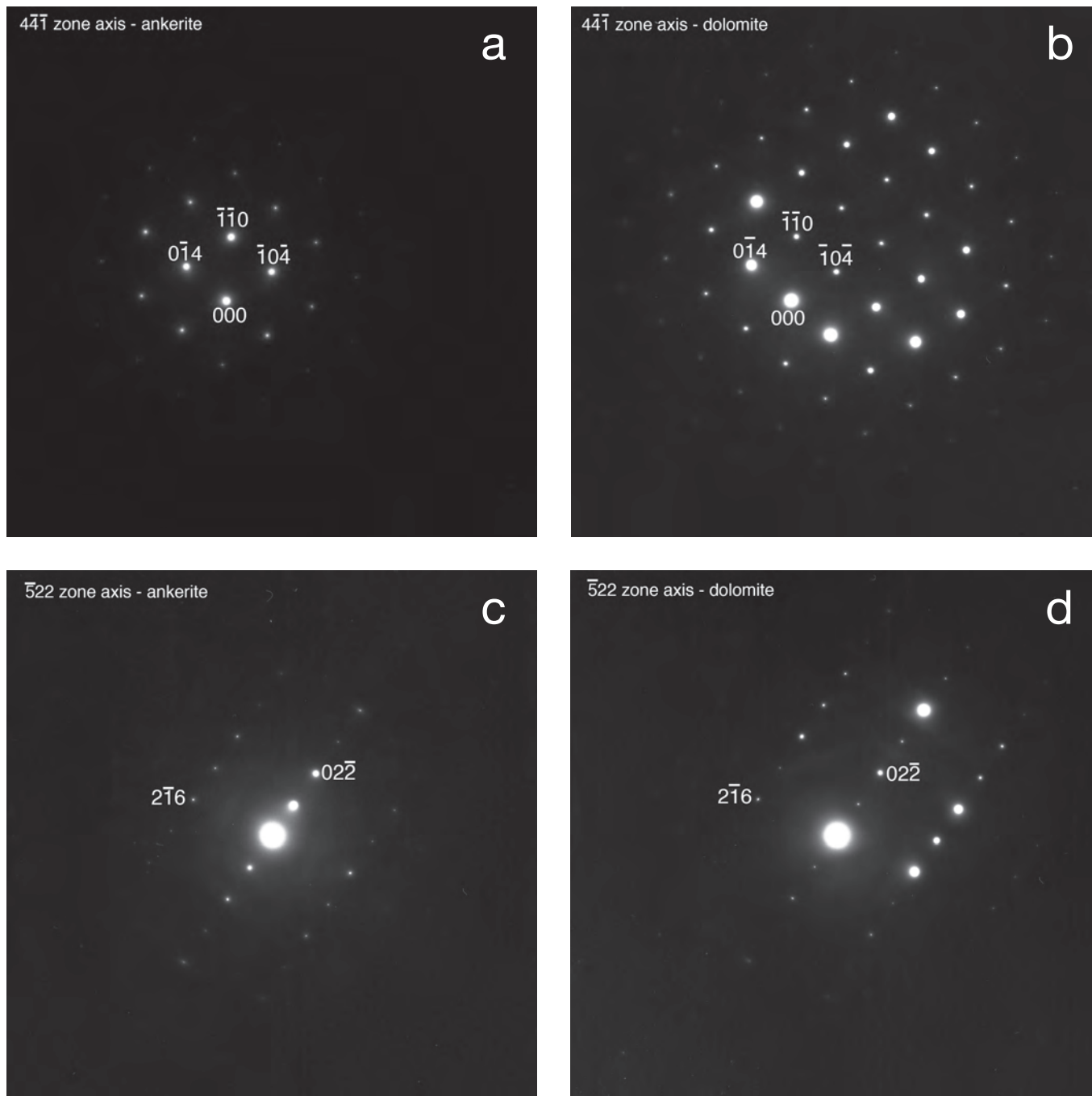


Appendix 1. Selected area electron diffraction patterns of a dolomite core and ankerite rim from the same grain.



Selected area electron diffraction (SAED) patterns collected from an ankerite rim (a, c) surrounding a dolomite core (b, d) of the same grain in the FIB foil cut from sample 21-35D (Figs. 8a, 9a). Panels a and b and panels c and d differ in the orientation of the crystal. Tilt angles were optimized on ankerite, and the sample was then translated without changing the tilts to dolomite. Minor differences in the orientation of the two minerals, reflected in relative intensity differences in the diffraction spots, likely result from bending of the foil over its length.