

Incommensurate phase in the kosmochlor-diopside join: A new polymorph of clinopyroxene

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ABSTRACT

Electron-diffraction patterns of clinopyroxene with an intermediate composition between kosmochlor and diopside show the presence of satellite reflections in diffuse streaks running perpendicular to (111) planes of the $C2/c$ structure. The position of these satellite reflections indicates the existence of an incommensurate (INC) phase. Based on the characteristics of the diffraction patterns, it is suggested that the INC phase consists of a regular arrangement of kosmochlor-rich and diopside-rich slabs with a periodicity 2.6 to 6.0 times the (111) spacing in the $C2/c$ structure. This is a new ordering scheme in clinopyroxenes.