

DETACHED BLOCKS IN THE POE MOUNTAIN ANORTHOSITE, LARAMIE ANORTHOSITE COMPLEX, WYOMING

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Large detached blocks deform anorthositic and leucogabbroic cumulates within the 1.43 Ga Poe Mountain anorthosite magma chamber in the Laramie Mountains of southeastern Wyoming. Various magmato-sedimentary structures present in the *middle* and *lower* Anorthositic Layered Zone (ALZ) resemble features present in the Skaergaard, Kalka, and Rhum layered intrusions. Trough cross-bedding, graded bedding, channel scours, flame structures, and slump blocks are associated with late stage doming of the Poe Mountain intrusion. Distribution of slump features indicates that the ALZ magma chamber floor was a gently sloping surface punctuated by local steepenings (old slump scarps, channel scours). Individual slump blocks are internally stratified, occur over many tens of meters of outcrop, and overlie zones of brecciated and recrystallized anorthosites and leucogabbros. Unstable blocks influenced by cumulate loading and viscous convection currents were periodically mobilized, sliding to lower levels. Some blocks appear to have partially solidified high in the chamber (roof or upper wall), detached, and slid down along the floor disrupting the underlying cumulate pile and deforming internally. A thin boundary layer (<3m) of loosely packed, melt-supported crystals existed between the floor cumulates and the overlying melt. Flame structures composed of this mobilized crystal mush commonly fill underside fractures with and between slump blocks. Individual zones of deformation grade laterally tens to hundreds of meters into unbrecciated cumulates. Late stage pegmatoid dikes cross-cut deformed zones.

magma, deformation, anorthosite, precambrian, slump

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