

PETROGRAPHY OF THE SKAERGAARD INTRUSION "THE MOTHER OF ALL MAFIC LAYERED INTRUSIONS"

Objective: The Skaergaard intrusion of East Greenland is universally recognized as the classic example of a well-differentiated intrusion formed by closed-system, fraction crystallization of a tholeiitic mafic magma. The seminal field and petrologic studies of Wager and others on this exceptionally well exposed intrusion have given rise to the cumulate theory of crystallization of mafic intrusions. We will look at thin sections and hand samples collected from the Skaergaard that profile its classic igneous stratigraphy; a stratigraphy we should recognize in our observations of Sonju Lake samples.

Procedure: Select 4 thin sections and hand samples from the two sample suite. Choose two samples from the Lower Zone (A, B, or C), one from the Middle Zone, and one from the Upper Zone (see geologic maps of the Skaergaard for sample locations). Complete a petrographic description form for each sample. On the last line of the form, be sure to define the cumulate rock type represented by this sample.

Lithostratigraphic Subdivisions of the Skaergaard Intrusion

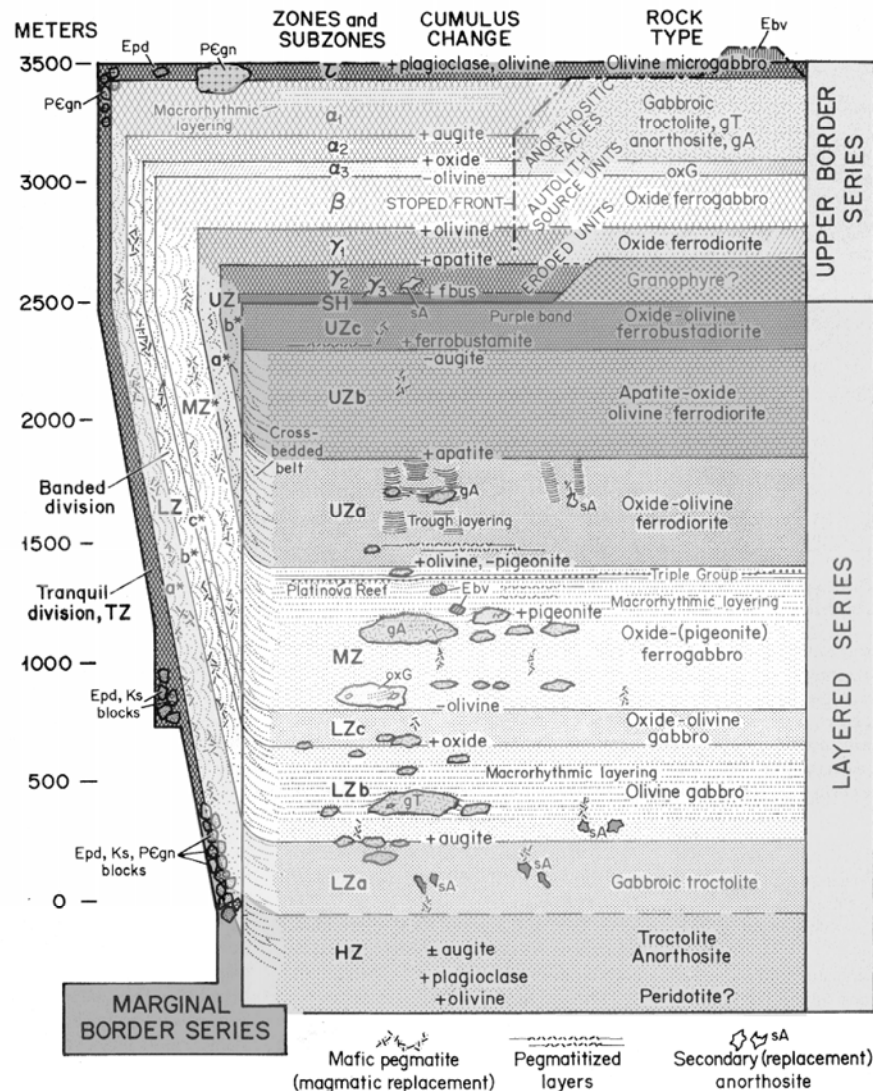


Figure 1. Igneous stratigraphy of the Skaergaard Intrusion defined by Irvine, Anderson, and Brooks (1998)