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**Snowflake Troctolite and Other Experimental Delights in Melts of the
 Kiglapait Lower Zone**

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AB 5 kb in graphite the cotectic trace (OL+PL+L) is within error a straight line in an XY transform of the ternary FSP-OLHY-AUG in which altitude Y=FSP and radial X = OLHY/(OLHY+AUG), all glasses calculated as the oxygen norm with ferrous ratio set at 0.9. The trace runs from X 0.8, Y 0.725 to X 0.38, Y 0.6 and is precisely parallel to but 2% lower in FSP than the summation liquid trace (Morse 1981 GCA), which in turn is derived from and parallel to the modal trace (Morse 1979 JPET). A basal LZ rock lies on the tangent to the cotectic trace. The location of the cotectic is indifferent to apatite content, to limited Fe-Ti oxide content, and to whether An and Fo are evolved or not; in sum, it is affected solely by the AUG content, which runs from 5% to saturation at 24%. Olivine settling occurs in some runs in less than 3 hours. Time studies show little change in PL composition, but significant change in OL composition, which appears to nucleate early and gain Fo for at least 24 hours. The mean $KD(Fe/Mg)=0.35$ for OL/L may therefore be a bit higher than the equilibrium value. $D(XAb)$ in PL/L follows a linear partitioning relation with $KD=0.524 \pm 0.037$. $D(FeO)$ in PL/L is scattered about 0.032 ± 0.006 . One run exactly on the cotectic crystallized several large PL snowflakes (radiating microspherulites) in eutectoid intergrowth with OL, which also locally contains PL and melt inclusions. One of these has 10 radial blades with uniformly spaced, oriented, angular OL patches that appear to be in structural continuity. In this structure, OL is more abundant than the cotectic ratio, and PL is too close to the L composition. The growth rate of these features is about 10x that of normal crystals grown off the cotectic. Rare nucleation of PL from scarce centers has driven the boundary L metastably into the OL field, causing it to nucleate in overabundance. In the natural case (Berg, CMP 72, 1980) snowflakes up to 15 cm diameter were caused by over-precipitation of OL, driving the L into the PL field.

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