XENOLITHS AND BASALTS FROM THE SOVGAVAN PLATEAU: REGULARITIES OF MANTLE STRUCTURE

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Lherzolite and pyroxenite mantle xenoliths from the Sovgavan plateau show 800 to 1200oC interval with the heating in the deeper (18 kbar) and upper parts (~12 kbar) corresponding to TP conditions of hawaiites and tholeiites. At the shallow level ToC-Cr#Sp and other T- trends split into 3groups. The Cr-richest trend corresponds to more distant from Pacific paleosubduction zone regions revealing a rapid growth of melting degree toward the shallower levels. Two trends of fertilization are more typical of SE regions. These mantle sections reveal continuous growth of modal pyroxenes illustrated by Si, Ca, Fe, Ti rise in bulk rock with temperature. Decompositions of amphiboles in deeper websterites caused by intruding plume basaltic melts brings to andesitic tendences in mantle melts. In Mantle magmatic breccias the varying in mineral composition xenolith are cemented with pyroxene-rich material. Clear diffusion profiles and presence of magmatic substitution zones suggest the igneous intrusive interaction of large portions of basaltic magma transporting disintegrated peridotite material. The model suggests depletion of a mantle wedge in the frontal part of continental subduction zone and its further fertilization by melt-fluid flows after migration of subduction zone eastward. The appearance of plume melts probably initiated by deep vertical subduction results in the intensive interaction of the melts of mantle wedge, the dehydration of the latter, and the formation of basalt lava plateaus evolving from andesite to tholeiite, and then to alkali basalts and basanite- hawaiites. The SE regions show more various and Si, alkali- rich compositions. RBRF grants 94-05-17103 and 99-05-65688.