Felsic granulites from the Kutná Hora complex in the Moldanubian zone of central Europe preserve mineral assemblage that record transition from early eclogite to granulite facies conditions, and exhibit discordant leucocratic veining, which is interpreted as evidence for melt loss during the decompression path. The granulites are layered and consist of variables proportions of quartz, ternary feldspar, garnet, biotite, kyanite, and rutile. In the mesocratic layers, garnet grains show relatively high Ca contents corresponding to 28-41 mol. % grossular end member. They have remarkably flat compositional profiles in their cores but their rims exhibit an increase in pyrope and a decrease in grossular and almandine components. In contrast, garnets from the leucocratic layers have relatively low Ca contents (15-26 mol. % grossular) that further decrease towards the rims. In addition to modelling of pressure-temperature pseudosections, compositions of garnet core composition, garnet rim-ternary feldspar-kyanite-quartz equilibrium, ternary feldspar composition, and the garnet-biotite equilibrium provide five constraints that were used to constrain the pressure-temperature path from eclogite through the granulite and amphibolite facies. In both layers, garnet cores grew during omphacite and phengite dehydration melting at 940 ºC and 2.6 GPa. Subsequent decompression heating to 1020 ºC and 2.1 GPa produced Ca- and Fe-poor garnet rims due to the formation of Ca-bearing ternary feldspar and partial melt. In both the mesocratic and leucocratic layer, the maximum melt productivity was 26 and 18 vol. %, respectively, at peak temperature constrained by the maximum whole-rock H_2O budget, ~1.05-0.75 wt. %, prior to the melting. The preservation of prograde garnet-rich assemblages required nearly complete melt loss (15-25 vol. %), interpreted to have occured at 1000-1020 ºC and 2.2-2.4 GPa by garnet mode isopleths, followed by crystallization of small amounts of residual melt at 760 ºC and 1.0 GPa. Phase formation and melt productivity were independently determined by experiments in the piston-cylinder apparatus at 850-1100 ºC and 1.7-2.1 GPa. Both the thermodynamic calculations and phase equilibrium experiments suggest that the partial melt was produced by the dehydration melting: muscovite + quartz = melt + K-feldspar + kyanite. The melt accumulation was probably controlled by shear instabilities and strain accommodation within foliation-parallel sites, eventually leading to the formation of modal layering. The presence of partial melt facilitated attainment of mineral equilibria at peak temperature thus eliminating any potential relics of early high-pressure phases such as phengite or omphacite. By contrast, adjacent mafic granulites and eclogites, which apparently share the same metamorphic path but have not undergone partial melting commonly preserve relics or inclusions of eclogite-facies mineral assemblages. The investigation of inclusions in garnets in felsic and mafic granulites suggests that their replacement products may be a pseudomorphoses after *HP* phases, for example: Ti-rich muscovites were found in garnets of Běstvina felsic granulite. In Miškovice felsic granulite garnet grains contain numerous columnar-shaped inclusions of K-feldspar which are always occur in the central and relatively Ca-rich parts of garnet. In the Blanský les felsic granulite garnet contains columnar euhedral inclusions filled mostly by albite but K-feldspar and plagioclase were also found. These inclusions occur in the Ca-rich internal parts of garnet and usually contain a mixture of Fe oxide + titanite with small holes. Calcic amphibole rimming apatite was also observed as inclusion in garnet. The mafic variety of granulite contains garnets with omphacite inclusions (Jd_{28}).

We suggest, that the Ti-rich muscovite preserves in garnet due to its high thermal stability. The columnar pseudomorphs of K-feldspar with kaolinite and opaque phases in garnet from other granulite in the Kutná Hora Complex indicate their possible formation from muscovite by incipient melting: muscovite + quartz = K-feldspar + kyanite + melt. The lack of rutile or other titaniferous phase in the pseudomorphs suggests that this muscovite was Ti-poor and not stable at higher temperatures. Based on their forms and composition, the columnar inclusions filled by albite, and partly also by Ca-rich plagioclase or K-feldspar, could have formed by transformation of jadeite, paragonite, glaucophane, or, in the case of plagioclase, from a mixture of paragonite and margarite. The presence of omphacite inclusion in garnet from mafic granulite suggests that these rocks passed through eclogite facies prior to their granulite facies overprint. The lack of clinopyroxene in felsic granulites could be due to inappropriate whole rock composition or could be a result of extensive granulite facies overprint in the following equilibrium: Ms + Qtz + Cpx = Grt + Ky + Kfs + Melt.