Partial melting and related two different P-T paths from UHT-metamorphic rocks in the Napier Complex, East Antarctica

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Napier Complex in East Antarctica underlain by Archean-Proterozoic ultrahigh temperature (UHT) metamorphic rocks. Sapphirine-bearing aluminous granulites as the characteristic UHT rocks show various modes of occurrence as follows; (1) UHT metasomatic reaction product between ultramafic and felsic gneisses (Cr-rich Spr without Qtz), (2) restitic natured lenticular block surrounded by granitic leucosome in the felsic gneiss (high-Mg Spr, not coexist with Qtz), and (3) quartz-rich gneiss among the layered gneiss (Spr+Opx+Grt+Qtz and Opx+Sil+Qtz). (2)- and (3)-types show different P-T evolution. The former indicate partial melting process then peak T reached up to 1030 C and without more increasing T by latent heat, while the latter was up to 1130 C without partial melting.