Based on differences in metamorphic grade and isotope model ages, the basement rocks of Sri Lanka can be subdivided from NW to SE into the Wanni Complex (WC), the Highland Complex (HC) and the Vijayan Complex (VC) (Milisenda et al. 1994). The UHT conditions of the HC were studied extensively and are well constrained whereas data from the WC and VC are less abundant. Only few recent petrological and geochemical work has been done especially along the WC–HC boundary which is still ill-defined (Kitano et al. 2018; Wanniarachchi & Akasaka 2016). Due to the common occurrence of migmatites, pyroxene bearing gneisses, and cordierite bearing metapelites/paragneisses, the WC clearly experienced granulite facies metamorphism. However, PT conditions are lower compared to the HC. In this study, U-Th-Pb monazite dating combined with a petrological study including phase equilibria modelling and thermobarometry was conducted focusing on cordierite bearing migmatic biotite gneisses located at the WC–HC boundary in the West of Sri Lanka. The HC underwent UHT metamorphism at 580-570Ma (Sajeev et al. 2010), the main metamorphic phase of the VC is dated with 580Ma. (Kröner et al., 2013). With U-Th-Pb monazite ages of around 530 Ma, the cordierite bearing assemblages from the WC are significantly younger (Wanniarachchi & Akasaka 2016). The predominantly felsic but also mafic peraluminous migmatic ortho- and paragneisses comprising the mineral assemblage cordierite + garnet + biotite + plagioclase + k-feldspar + quartz + ilmenite + magnetite + spinel + sillimanite ± orthopyroxene and contain monazite (+ zircon ± xenotime) as garnet inclusions (Group1) and in the matrix (Group2). Group1 monazite ages cluster around 575±5 Ma and 561±5 Ma whereas ages of Group 2 cluster at 550±3 and 527±3. Based on ages and textural occurrence of monazite we suggest that two thermal events at ca. 550-575 Ma and ca. 530-550 Ma are recorded in this rock type indicating a complex evolution during the late stage of the Pan-African orogeny. PT conditions range from 700–900°C and from 5–8 kbar with a decreasing north-south gradient. Further geochronological investigations are needed to relate either to the older or the younger overprint to the main metamorphic phase of the WC.


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