

FIRST EXAMPLE OF NEOPROTEROZOIC ECLOGITE FROM BEISHAN IN WESTERN CHINA

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1. Petrography and assemblages The mineral assemblages in eclogite can be classified into four different stages: 1) the earlier super-high pressure stage represented by the exist of coesite pseudomorph, 2) the main high pressure stage represented by the equilibrium paragenesis of garnet and omphacite, 3) the later high pressure retrogressive stage represented by the symplectitic assemblage of clinopyroxene + hornblende + plagioclase around the earlier omphacite and garnet, 4) the latest superimposed stage represented by the assemblage of chlorite + epidote + plagioclase. The former three stages reflect the major process of eclogite facies metamorphism and the latest stages the light overprinting of greenschist facies retro-metamorphism at the shallow level of crust.

2. Geochronology Three of analysed eight zircons is near the upper intercept and gives the U-Pb age of 857 ± 71 Ma, five zircons are near the lower intercept and give the age of 490 ± 28 Ma. The country rock with the eclogite enclaves is porphyroid granitic gneisses gives the age of 880 ± 31 Ma by single zircon analysis. The another massive fine granule granite intruding the porphyroid granitic gneisses gives the zircon U-Pb age of 425 ± 4 Ma. So the lower intercept age of 490 ± 28 Ma of eclogite may represent reworking event, and the upper intercept age of 857 ± 71 Ma may represent the superhigh pressure metamorphic event.