KONDAPALLI GRANULITE COMPLEX, EASTERN GHATS BELT, INDIA

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The rocks of Kondapalli granulite Complex, part of the Eastern Ghats Belt experienced high-T, low-P regional metamorpohism. The P-T conditions at the peak of metamorphism are estimated from hercyritic spinel with quartz in meta-pelites ,spinel-olivine-plagioclase mafic granulites and wollastonite-anorthite calc-silicate rocks to have been c.700 C, 4 Kbar. A counterclockwise P-T path is indicated by prograde reaction textures preserved as relics in garnet porphyroblasts. Peak metamorphism was accompanied by dehydration melting of garnet+K-feldspar+water=Sillimanite+biotite+plagio-clase. At conditions very near those of the peak, extensive shearing produced ribbon quartz and grain size reduction of garnet in metapelites. Retrograde textures are consistent with post-peak isobaric cooling. The cause of the high T-low-P metamorphism was probably the convective transfer of heat by the emplacement of high-level anorthositic intrusions.