



The provenance of garnet: constraints provided by studies of coastal sediments from southern India

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Abstract

The provenance of sediment with heavy mineral suites containing garnets with low-grossular and high-pyrope contents is enigmatic. Such garnet assemblages characterise sediments in many basins worldwide. They are especially common in the sedimentary basins around northern Britain, but their source cannot be identified in adjacent basement rocks. This paper documents garnet populations in beach, dune and river sands from southern India, which almost exclusively comprise low-grossular, high-pyrope garnets. These are derived from the high-grade (granulite facies) metasedimentary and charnockitic rocks that form the basement in this area. By analogy, similar lithologies are inferred to source sediments with low-grossular, high-pyrope garnet assemblages seen elsewhere. In the case of the sandstones of northern Britain, the most likely location of such material is considered to be Greenland. © 2002 Published by Elsevier Science B.V.

Keywords: Garnet; Provenance; Southern India; Khondalite; Charnockite