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Cratons' thermal state in China

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There are three cratons in China, the North China Craton, the Tarim Craton, and the Yangtze Craton. Each craton has experienced complicated evolution histories since their formation, presents distinct thermal regime, and displays different stability. The Tarim Craton keeps its stability till now. The eastern North China Craton has been destructed in the Mesozoic, but the western North China Craton still stable. The stability of the Yangtze craton is a controversial issue, and the newest study believed it experienced similar tectono-thermal events as the North China Craton and has also been destructed in the Mesozoic. Several sedimentary basins developed in these cratons, and most of them are rich of oil-gas resources. These basins have different formation mechanism and experienced distinct tectono-thermal evolution, which resulted in individual thermal histories. The sedimentary basins have recorded distinct thermal evolution of these craton. We analyze the heat flow data, lithospheric thermal thickness, basins' thermal histories together with tectono-thermal events in these cratons, with aim to provide ideas for geodynamical mechanism on the craton stability/destruction, as well as implications for hydrocarbon generation.