

Shanderman eclogite (Iran): age, significance and implications for Pangea

*Daniel Pastor-Galán¹, Tatsuki Tsujimori¹, Kewook Yi², Alicia López-Carmona³

1. Center for North East Asian Studies, Tohoku University, 2. Korea Basic Science Institute , 3. Salamanca University

During the amalgamation, tenure and break up of Pangea several oceans played a major tectonic role. Remnants of them now occur mostly along the margins of the Atlantic, Mediterranean, Black and Caspian seas, as well as in the Alpine-Himalayan and adjacent orogens. Of those oceans, three (Iapetus, Tornquist and Rheic) were closed during the amalgamation of Pangea and another (Neo-Tethys) is the main witness of its break-up.

The Paleotethys is the enigmatic ocean that shared an internal position during most of Pangea's tenure. There is no consensus about its origin, some suggest that opened during the latest stages of Pangea's amalgamation (Devonian-Carboniferous) whereas others consider it a remnant of the mostly subducted Rheic ocean after Gondwana-Laurussia collision. The Shanderman eclogites, in NW Iran are a potential candidate to represent the Paleotethys ocean. They are metamorphosed oceanic rocks (protolith oceanic tholeiitic basalt with MORB composition). Eclogite occurs within a serpentinite matrix, accompanied by mafic rocks resembling a dismembered ophiolite. The eclogitic mafic rocks record different stages of metamorphism during subduction and exhumation. In this talk I will show the new petrological, geochemical and geochronological results from this eclogites to shed light on the Paleotethyan problem.

Keywords: Eclogite, Metamorphism, U-Pb / Lu-Hf