

Oceanic Anoxic Event recorded in the Permian /Triassic boundary sequence of bedded chert from Arrow Rocks, Southern Hemisphere

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Geochemical study was performed on continuous sequence of bedded chert spanning the Permian/Triassic (P/T) boundary from the Arrow Rocks, Northland, New Zealand. The chert sequences have well constrains by conodont and radiolarian biostratigraphy (e.g., Takemura et al., 2003; Yamakita et al., 2003).

Considering different behavior of U, S, Mo and As under anoxic conditions, we distinguished two types of OAE signals based on geochemical compositions of studied samples, type (1) high values of both U/Al and S/Al ratios with week or no peak of Mo/Al and As/Al ratios, type (2) high values of S/Al, Mo/Al and As/Al ratios with week peak U/Al ratio. The former is observed in Lower Triassic (upper Induan) and the latter is around the P/T boundary. Redox potential decreases from type (1) to type (2). These results insist that the Late Induan (Early Triassic) Oceanic Anoxic Event (OAE) is stronger than those around the P/T boundary, which is quite different from the OAE record in sedimentary sequences from the Northern Hemisphere.

The late Induan OAE recognized from Arrow Rocks, New Zealand is well corresponded to the radiolarian faunal change from Permian to Triassic types. This fact may suggest that peak time and magnitude of the P/T boundary extinction event are not uniform in the world.