

THE ROLE OF SUPERNOVAE IN THE PERMO-TRIASSIC MASS EXTINCTIONS

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The nearby supernova (10–500pc from the Sun) explosions were frequent events during the history of Earth. The P/Tr episode is related to explosion of a nearby supernova and its consequences in the Solar System. The “creeping death” as a “stealth” can more in the form of enhanced radiation level and from radiation induced changes in the chemistry of the atmosphere (anoxia), climatic changes (e.g. dry climate) and changes in the life-spaces which had not been later available for taxa. More very sharp spherule layers are nailing through the different facies, which came from the different expanding envelopes of the supernova. The expanding supernova remnant can encounter with already interstellar material and can trigger that by its enormous mechanical and electromagnetic energy. The interstellar dust can be moved away by the supernova shock wave front and the grains both can be the sources of that interstellar dust which collided with the atmosphere of the Earth and sedimented into the geologic layers and finally recorded as interstellar microspherules in the P/Tr boundary geochronological interval. Other supposed SN events during the Earth history with similar type of extinctions: – Cambrian-Ordovician transition– Triassic-Jurassic transition– Pleistocene-Holocene transition (see Brakenridge 1981)