Deciphering 1991 coral mortality episode via geochemistry approach

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A mysterious coral mortality occurred in low-latitude of western Pacific and eastern Indian Ocean during late summer and fall of 1991. Previous studies suggested this event was caused by anomalously high sea surface temperature (SST) associated with an El Niño state. However, the SST values were not significantly different from those of adjacent years. Here we present multiproxy records of two modern *Porites* corals, collected from Son Tra Island (16° 13' N, 108° 12' E) and Meiji Reef (9° 55' N, 115° 32' E) in the western and southern South China Sea (SCS) respectively, to probe the forcings for this coral mortality episode. The evidences of tephra deposited on coral skeleton and coral skeletal Rare Earth Elements (REEs) pattern indicate that this mortality could be caused by ash fallout from Mt. Pinatubo volcano (15° 14' N, 120° 35' E), which was erupted on June 15. Our findings highlight a sensitive impact of volcano eruption on fragile coral reef ecosystem under the current global warming crisis