

The Causal Link Between Deccan Flood Basalts and the Cretaceous Mass Extinctions: A Case of Unfounded Assumptions.

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It has been hypothesized by several researchers that the voluminous ($\sim 1.5 \times 10^6 \text{ km}^3$) Deccan Trap lava flows of Western and Central India erupted in a rather short interval across the Cretaceous-Tertiary Boundary (KTB) leading to several geological anomalies including mass extinctions. The determination of the precise age and duration of the volcanism becomes critical to the validation of this proposal. In this talk I will demonstrate that the attempts so far, to constrain the timing and tempo of the Deccan volcanism using paleontological, radiometric and paleomagnetic dating methods have not yielded unequivocal results. Therefore, the causal link between the Deccan volcanism and the KTB is based on plausibility arguments, the persuasiveness of which often depends more on the eloquence of their advocates than on the weight of the relevant data. The renewed efforts at very high resolution geochronological studies by several research groups may help to resolve this contentious issue.