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# Radiometric datation of the Carnian Pluvial Event, and implications for its possible causes

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A physical and biotic event, known either as the “Reingrabener Turnover” (Schlager and Schöllnberge, 1974), or as the “Carnian Pluvial Event” (Simms and Ruffel, 1989), occurred in the latest early Carnian, Late Triassic. It is manifested by a temporary demise of carbonate platforms and an increased input of coarse siliciclastics at least in the western Tethys, and a shift to a more humid climate in tropical latitudes (Simms and Ruffel, 1989; Prochnow et al., in press). The biological signature is less well defined, however, the rise of calcareous nannoplancton and dinosaurs is approximately coincident. Other groups experienced major radiations: among others, ammonoids, conodonts and scleractinian corals.

A precise U/Pb zircon age from a primary ash bed within the upper Carnian hemipelagic Calcari con Selce (i.e., Cherty limestones) of the southern Apennines, Italy, constrains the age of this event. The studied ash bed lies 3 m above the Carnian Pluvial Event, identified here basing on sedimentology and conodont biostratigraphy. The age of the ash bed requires a major revision of the Triassic time scale and its age approximately coincides with that of the (not well dated) Large Igneous Province of Wrangellia, although more high precision radiometric dates are required to confirm this apparent coincidence.

At present, we are reluctanct to establish a causal link between the eruption of Wrangellia volcanics and the physical and biotic events related to the Carnian Pluvial

Event. However, we suggest that this event deserves more attention, and its possible link to Wrangellia should be further explored.

References:

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