

# **New U-Pb constraints identify the end-Guadalupian and possibly end-Lopingian extinction events conceivably preserved in the passive margin of North America: implication for regional tectonics**

DAVYDOV V., CROWLEY J., SCHMITZ M., SNYDER W.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

## **Abstract**

Copyright © Cambridge University Press 2016 The discovery and dating of a volcanic ash bed within the upper Phosphoria Formation in SE Idaho, USA, is reported. The ash occurs 11 m below the top of the phosphatic Meade Peak Member and yielded a  $^{206}\text{Pb}/^{238}\text{U}$  date of  $260.57 \pm 0.07 / 0.14 / 0.31$  Ma, i.e. latest Capitanian, Guadalupian. The stratigraphic position of this ash near the top of the Meade Peak phosphatic Member of Phosphoria Formation indicates plausible completeness of the sedimentation within the Guadalupian–Lopingian and probably at the Permo-Triassic (P-T) transitions. The new radiometric age reveals that the regional biostratigraphy and palaeontology of Phosphoria and Park City formations requires serious reconsideration, particularly in cool water conodonts, bryozoans and brachiopods. The new age proposes that the Guadalupian–Lopingian boundary (GLB) coincides with the Meade Peak – Rex contact and consequently with the end-Guadalupian extinction event. The lack of a major unconformity at the P-T transition suggests that the effects of the Sonoma orogeny were not as extensive as has been assumed.

<http://dx.doi.org/10.1017/S0016756816000959>

---

## **Keywords**

correlation, Idaho North America margin, Permian–Triassic, Phosphoria and Park City formations, Sonoma orogeny, U-Pb CA-IDTIMS