

**Placement of the Guadalupian-Lopingian (Capitanian-Wuchiapingian) boundary in the Permian of eastern Australia**

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The Guadalupian-Lopingian-Boundary (GLB) is currently placed at ~260 Ma and defined by the first occurrence of the conodont species *Clarkina postbitteri postbitteri*. Near the end of the Guadalupian stage, in the mid-Capitanian a major biotic crisis occurred, which affected both terrestrial and marine organisms. Globally this event is recognised by changes in C and Sr isotope signatures and sea-level regression. However, a detailed chronology of this major event is not fully established.

We performed high-precision U-Pb geochronology on zircons from ash layers in eastern Australian basins to place the GLB and the extinction horizon in eastern Australia. Drill core and outcrop samples were collected from the Sydney and Gunnedah Basins. Zircons were analysed by chemical abrasion ID-TIMS, which has an age resolution at the sub-permil level. In the Sydney Basin the boundary interval occurs between the Broughton Formation (263.4 Ma) and the Fairford Formation (257.3 Ma). In the Gunnedah Basin the GLB is above the Watermark Formation (262.4 Ma) and below the Pamboola Formation (255.9 Ma).

Further ongoing studies of additional ash layers in core and outcrop sections will hopefully allow us to better constrain the GLB in the eastern Australian basins.