

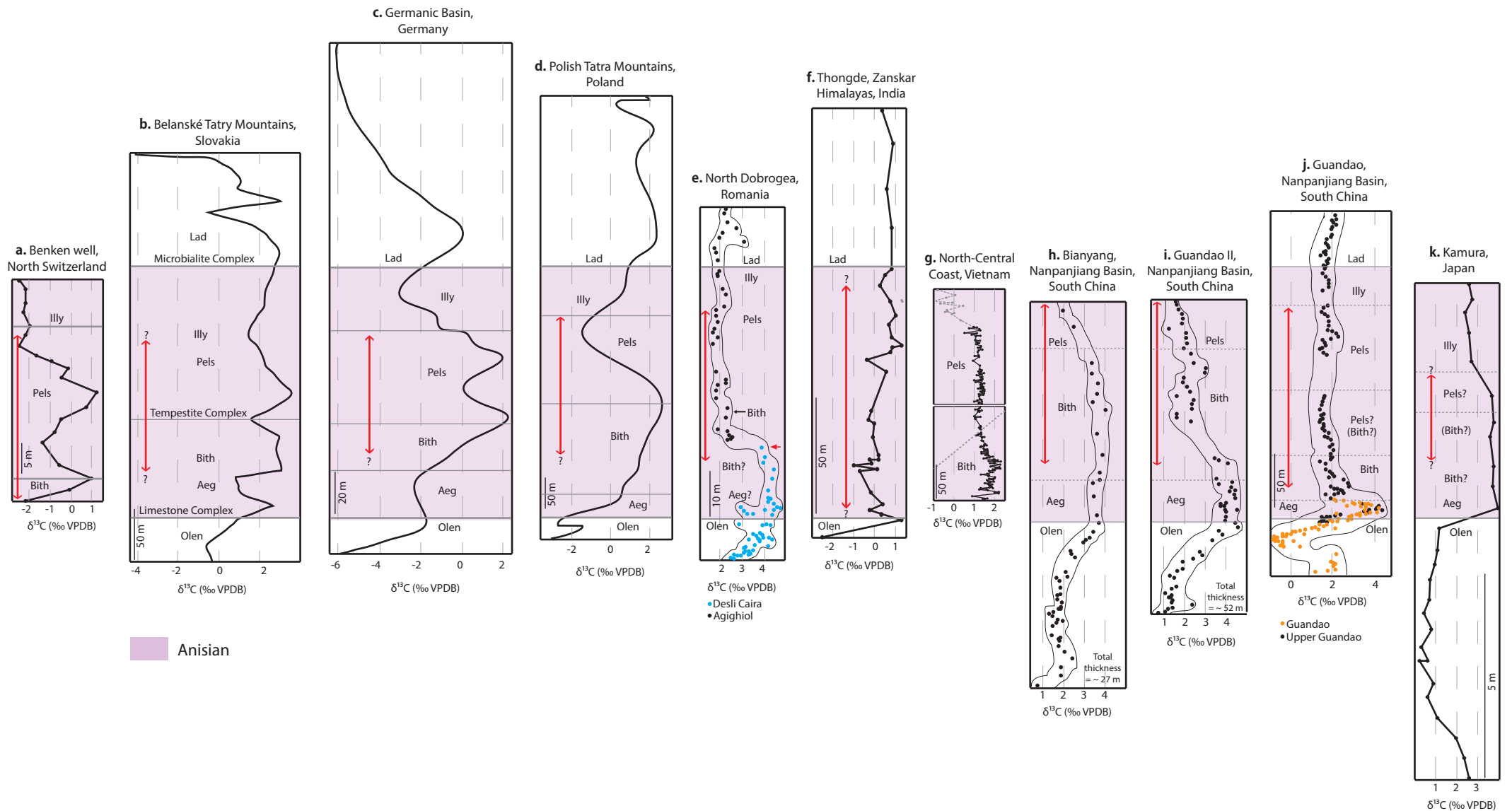


Fig. S1 Anisian $\delta^{13}\text{C}$ profiles of carbonates from various sites/sections.

a, North Switzerland (Feist-Burkhardt et al. 2008); b, Belanské Tatry Mountains, Slovakia (Rychliński and Szulc 2005); c, Germanic Basin, Germany (Szulc 2000); d, Polish Tatra Mountains (Jaglarz and Szulc 2003); e, North Dobrogea, Romania (Atudorei et al. 1997); f, Thongde in the Zaskar Himalayas, India (Baud et al. 1989); g, North-Central Coast region, Vietnam (this study); h, Bianyang, Nanpanjiang, South China (Sun et al. 2012); i, Guandao II, Nanpanjiang, South China (Sun et al. 2012); j, Guandao, Nanpanjiang, South China (Payne et al. 2004); k, Kamura, Japan (Zhang et al. 2017). The vertical red double arrows indicate the interval represented by the studied carbonate succession in Vietnam. The small horizontal arrows indicate the basal horizon of the Bithynian $\delta^{13}\text{C}$ decrease followed by the interval of prolonged (Bithynian–Pelsonian) stability or gradual decrease in values, as reported from South China and Romania. Abbreviations: Aeg, Aegean; Bith, Bithynian; Illy, Illyrian; Lad, Ladinian; Olen, Olenekian; Pels, Pelsonian.