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# The geomagnetic polarity timescale for the Lower Triassic, utilising data from the Buntsandstein and the Boreal Triassic

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There have been many studies attempting to define the Lower Triassic polarity pattern, from the early pioneering studies by Russian workers on the eastern European Platform, to more recent studies in South and North China. Whilst these often show some similarities, they also reveal major differences, which cannot easily be resolved due to the very different means of age control. Combining data from several sections in the marine Boreal Triassic, a composite, predominantly ammonoid calibrated, magnetostratigraphy is constructed. Its correlation with the geomagnetic record from the mainly continental succession of the Lower Germanic Triassic (Buntsandstein) reveals close similarities concerning the number of magnetozones, their relative thickness as well as the overall polarity pattern. We examine the similarity and differences between these records and critically assess some of the apparent discrepancies between the biostratigraphic age, if the magnetostratigraphic correlations are accepted.

Based on magnetostratigraphic correlation, the Griesbachian and Dienerian correspond to most of the Lower Buntsandstein, with both records being indicated by 3 distinctive normal polarity intervals. Above, the lower to mid Smithian and the lowermost Middle Buntsandstein are mostly of reverse polarity. The following upper Smithian and Spathian as well as the middle and upper part of the Middle Buntsandstein are mainly of normal polarity with at least 3 substantive reverse polarity intervals. We discuss some of the problems in locating the Permian-Triassic boundary (i.e. proxy for FAD of H.parvus) relative to the magnetostratigraphy, and the likely position of the base Olenekian, pending final decision on an Olenekian GSSP. We also consider

the magnetostratigraphic relationships around the Lower/Middle Triassic boundary. With this robust correlation framework, we examine the synchronicity between the Buntsandstein cyclostratigraphy, and the sea-level-driven sequence stratigraphy of the Boreal successions.