

File Name: Supplementary Data 1

Description: Matrix derived from Xu et al 2015 (1) for phylogenetic analysis, which is saved in Nona format.

File Name: Supplementary Data 2

Description: Matrix derived from Brusatte et al 2014 (2) for phylogenetic analysis, which is saved in Nona format.

1. X. Xu *et al.*, A bizarre Jurassic maniraptoran theropod with preserved evidence of membranous wings. *Nature* **521**, 70-73 (2015).
2. S. Brusatte, G. Lloyd, S. Wang, M. Norell, Gradual assembly of avian body plan culminated in rapid rates of evolution across the dinosaur-bird transition. *Current Biology* **24**, 2386-2392 (2014).