- Bromage, T. G., Schrenk, F. & Juwayeyi, Y. M. Paleobiogeography of the Malawi Rift: Age and vertebrate paleontology of the Chiwondo Beds, northern Malawi.
   Journal of Human Evolution 28, 37–57 (1995).
- Campisano, C. J. & Feibel, C. S. Connecting local environmental sequences to global climate patterns: evidence from the hominin-bearing Hadar Formation, Ethiopia. *Journal of Human Evolution* 53, 515–527 (2007).
- de Heinzelin, J. et al. Environment and behavior of 2.5-million-year-old Bouri hominids. Science 284, 625–629 (1999).
- Deino, A. L. <sup>40</sup>Ar/<sup>39</sup>Ar dating of Bed I, Olduvai Gorge, Tanzania, and the chronology of early Pleistocene climate change. *Journal of Human Evolution* 63, 251–273 (2012).
- DiMaggio, E. N. et al. Late Pliocene fossiliferous sedimentary record and the environmental context of early *Homo* from Afar, Ethiopia. *Science* 347, 1355–1359 (2015).
- Domínguez-Rodrigo, M. et al. The ST Site Complex at Peninj, West Lake Natron, Tanzania: Implications for Early Hominid Behavioural Models. Journal of Archaeological Science 29, 639–665 (2002).
- 7. Domínguez-Rodrigo, M. *et al.* First Partial Skeleton of a 1.34-Million-Year-Old *Paranthropus boisei* from Bed II, Olduvai Gorge, Tanzania. *PLoS ONE* **8**, e80347 (2013).
- Everett, M. A. The paleoecology of the Pleistocene upper Busidima Formation,
  Gona, Afar Depression, Ethiopia. (Indiana University, 2010).

- Geraads, D. La faune des dépôts pléistocènes de l'Ouest du lac Natron (Tanzanie);
  interprétation biostratigraphique. The Pleistocene fauna from West Natron
  (Tanzania); biostratigraphic interpretation. sgeol 40, 167–184 (1987).
- Gilbert, W. H. & Asfaw, B. Homo erectus: Pleistocene Evidence from the Middle Awash, Ethiopia. (University of California Press, 2008).
- 11. Goble, E. D. Paleontology of the Chemeron Formation, Tugen Hills, Kenya with emphasis on faunal shifts and precessional climatic forcing. (Yale University, 2012).
- 12. Green, D. J. et al. Scapular anatomy of *Paranthropus boisei* from Ileret, Kenya. *Journal of Human Evolution* **125**, 181–192 (2018).
- 13. Harrison, T. Introduction: The Laetoli Hominins and Associated Fauna. in
  Paleontology and Geology of Laetoli: Human Evolution in Context (ed. Harrison, T.)
  1–14 (Springer Netherlands, 2011). doi:10.1007/978-90-481-9962-4\_1.
- 14. Kimbel, W. H. et al. Late Pliocene Homo and Oldowan Tools from the Hadar Formation (Kada Hadar Member), Ethiopia. Journal of Human Evolution 31, 549– 561 (1996).
- 15. Kullmer, O. et al. The first Paranthropus from the Malawi Rift. Journal of Human Evolution 37, 121–127 (1999).
- Lague, M. R. et al. Humeral anatomy of the KNM-ER 47000 upper limb skeleton from Ileret, Kenya: Implications for taxonomic identification. *Journal of Human Evolution* 126, 24–38 (2019).
- 17. Leakey, L. S. B. & Leakey, M. D. Recent discoveries of fossil hominids in Tanganyika: At Olduvai and near Lake Natron. *Nature* **202**, 5–7 (1964).

- McDougall, I. et al. New single crystal 40Ar/39Ar ages improve time scale for deposition of the Omo Group, Omo–Turkana Basin, East Africa. *Journal of the Geological Society* 169, 213–226 (2012).
- 19. McHenry, L. J. & Stanistreet, I. G. Tephrochronology of Bed II, Olduvai Gorge, Tanzania, and placement of the Oldowan–Acheulean transition. *Journal of Human Evolution* 120, 7–18 (2018).
- 20. Reed, D., Harrison, T. & Kwekason, A. Eyasi Plateau Paleontological Expedition, Laetoli, Tanzania, fossil specimen database 1998–2005. *Sci Data* **6**, 304 (2019).
- 21. Stanistreet, I. G. Fine resolution of early hominin time, Beds I and II, Olduvai Gorge, Tanzania. *Journal of Human Evolution* **63**, 300–308 (2012).
- 22. Suwa, G. *et al.* Plio-Pleistocene terrestrial mammal assemblage from Konso, southern Ethiopia. *Journal of Vertebrate Paleontology* **23**, 901–916 (2003).
- 23. Werdelin, L. Chronology of Neogene Mammal Localities. in *Cenozoic Mammals of Africa* (eds. Werdelin, L. & Sanders, W. J.) 27–43 (University of California Press, 2010).
- 24. Woldegabriel, G., Gilbert, W. H., Hart, W. K., Renne, P. R. & Ambrose, S. H. Geology and geochronology. in Homo erectus: *Pleistocene Evidence from the Middle Awash, Ethiopia* (eds. Gilbert, W. H. & Asfaw, B.) 13–43 (University of California Press, 2009).
- 25. Wood, B. & Leakey, M. The Omo-Turkana Basin Fossil Hominins and Their Contribution to Our Understanding of Human Evolution in Africa. *Evolutionary Anthropology: Issues, News, and Reviews* **20**, 264–292 (2011).