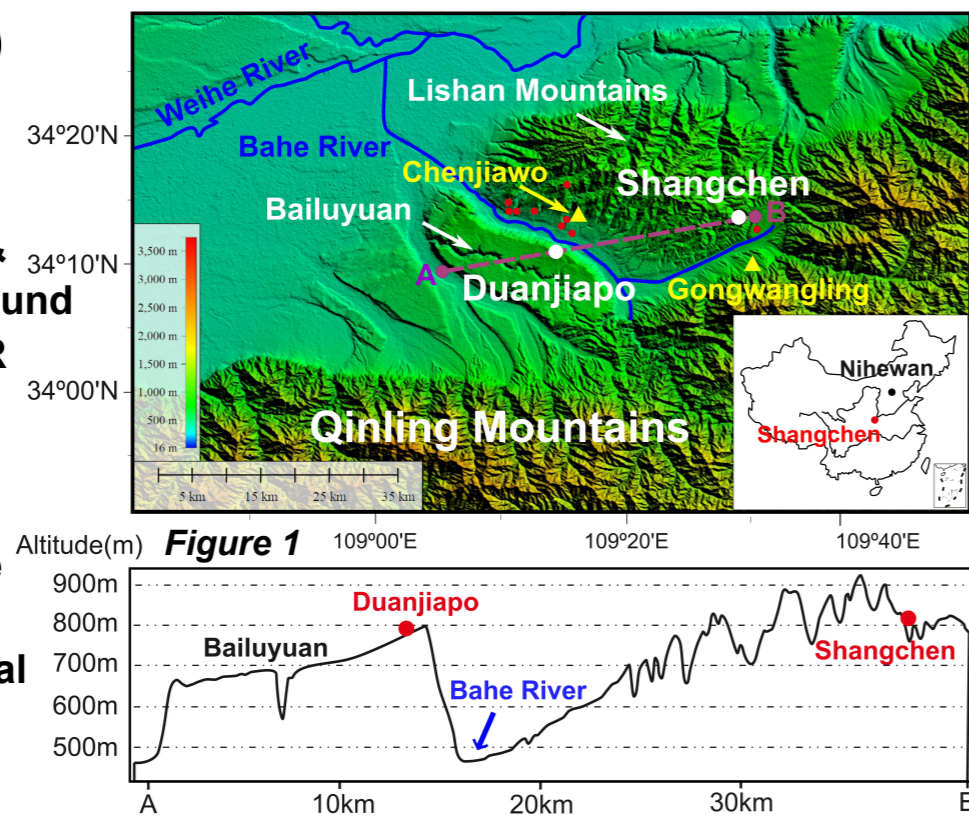


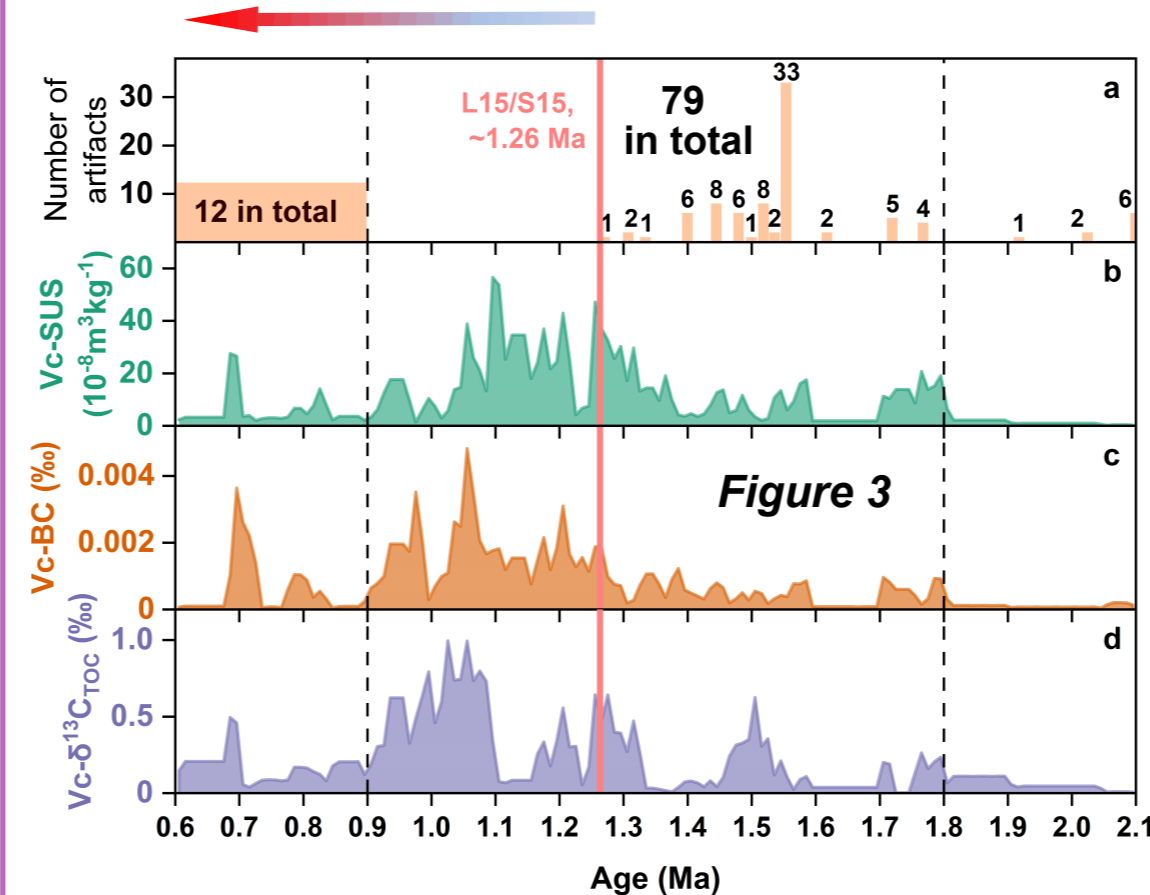
Zhe Wang¹, Bin Zhou¹, Xiangchun Xu¹, Yang Pang¹, Michael Bird², Bin Wang³, Michael Meadows^{4,5} and David Taylor⁶

Background (Figure 1)

- Site: **Shangchen in Lantian area** on southern Chinese Loess Plateau
- Lantian area beholds Gongwangling & Chenjiawo sites with hominin fossils found
- ~2.1–0.6 Ma lithics records HOWEVER with a hiatus during ~1.26–0.9 Ma
- The lithics were excavated from **typical loess/paleosol deposits**, which have been deeply explored and provide an opportunity to comprehensively investigate the link of paleoenvironmental change to early hominin activities in **China for the first time.**



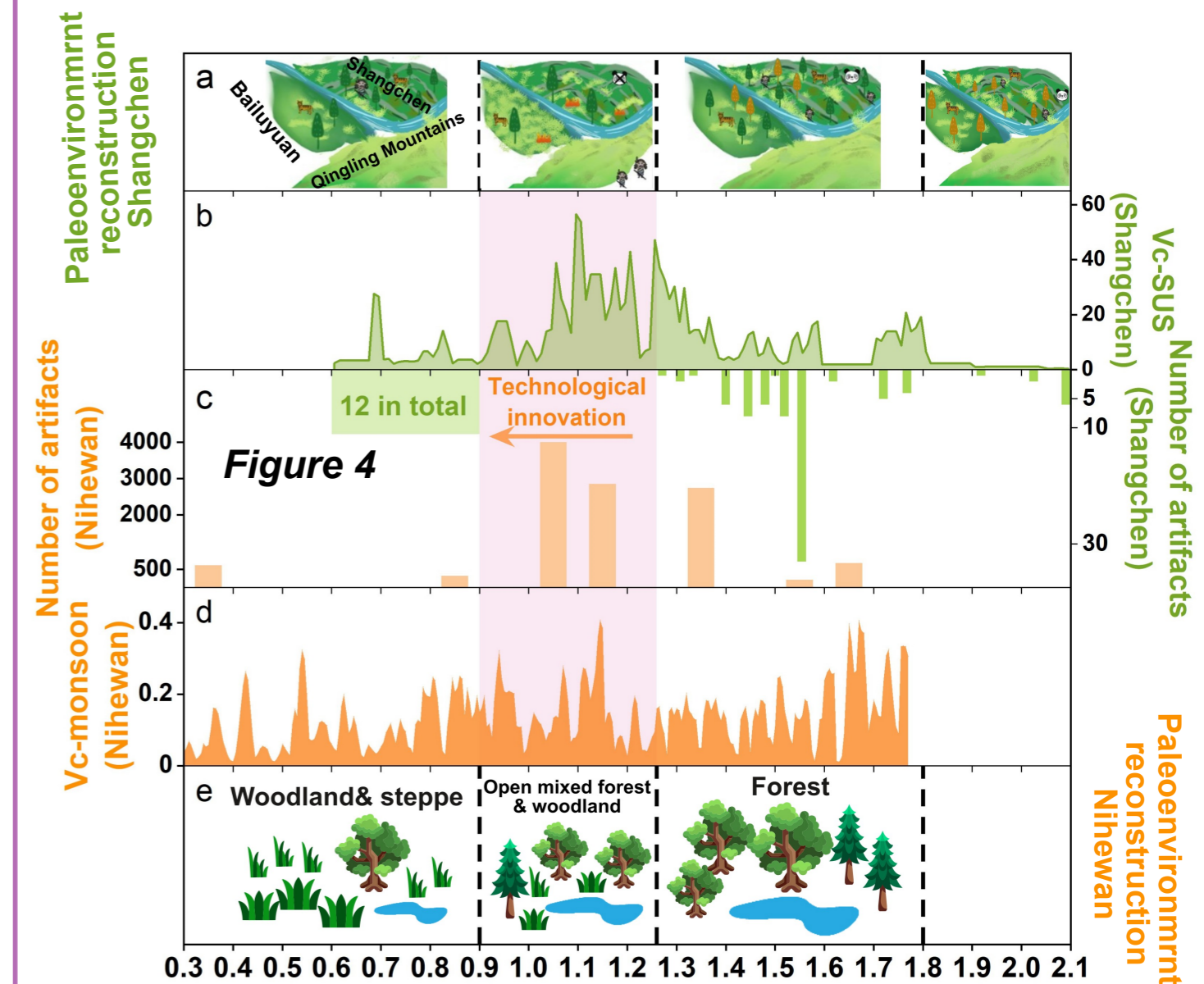
Temporal analysis (Figure 3)



Variability change (Vc-proxies in b–d) & long-term trends (the arrow derived from Figure 2)
Vc-proxies:
 each original data point was substituted as the SD of itself and the two adjacent data points

Low variability + long-term trends = **recurrence of lithics**
 High variability + long-term trends = **absence of lithics**
 Low variability + no long-term trends = **prosperity of hominins**

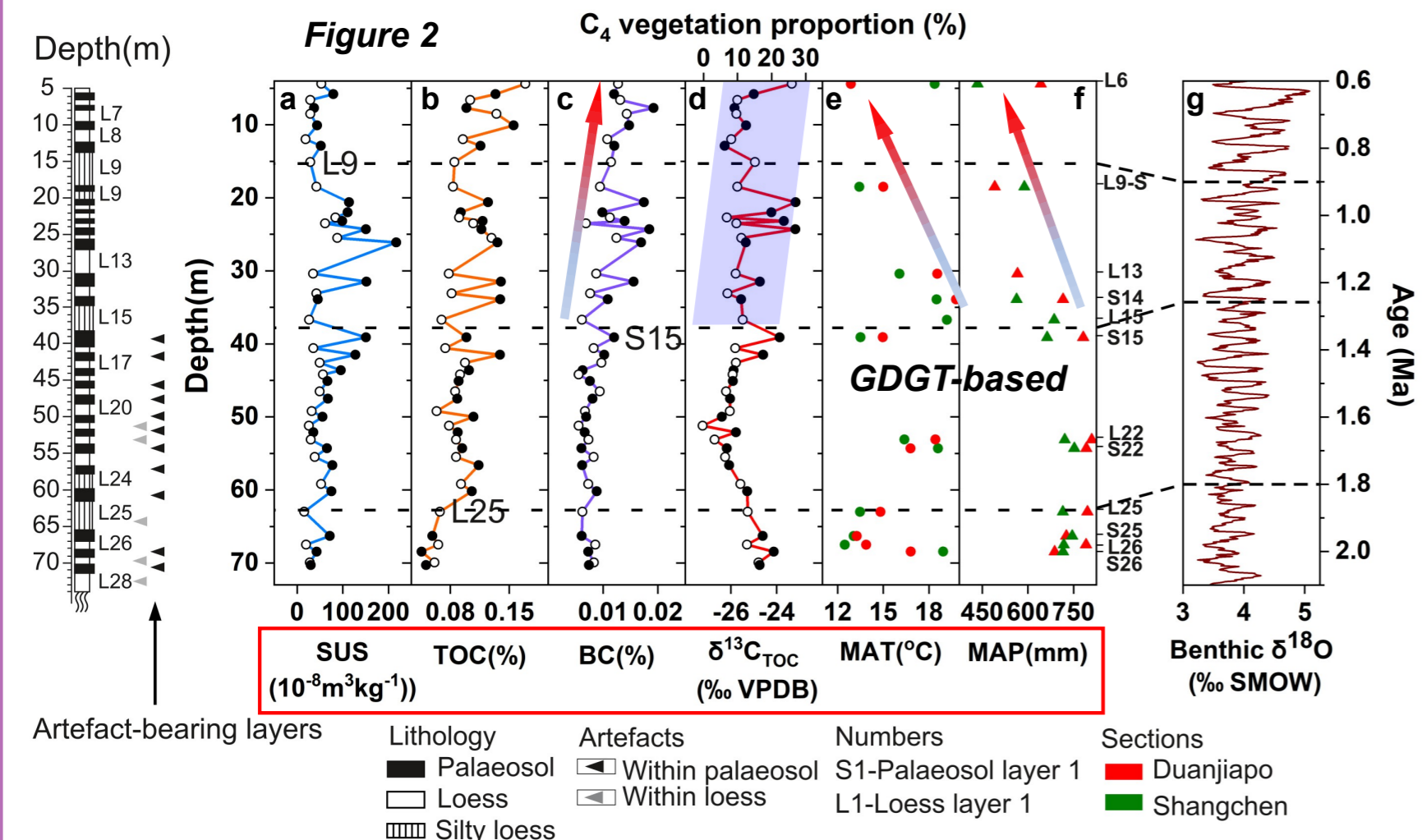
Spatial comparison (Figure 4)



	Variability & trends	Hominin response	Local environments
Shangchen	High & yes	Extinction / escape	Grassland expansion = loss of shelter
Nihewan	High & yes	Prosperity & innovation	Contraction of a lake = more luxuriant living space

Regional vs **Local**
Local > Regional!

What we do (Figure 2)



Chronology: Magnetostratigraphy & Chiloparts timescale
Sampling: 48 samples from SC in a–d; 12 and 11 samples from SC and DJP respectively in e–f
Four climate-vegetation periods (2.1–1.8, 1.8–1.26, 1.26–0.9, 0.9–0.6 Ma) divided
 SUS, magnetic susceptibility; TOC, total organic carbon; BC, black carbon; MAT, mean annual temperature; MAP, mean annual precipitation; SC, Shangchen; DJP, Duanjiapo.

Affiliation
¹Key Laboratory of Surficial Geochemistry (Ministry of Education), School of Earth Sciences and Engineering, Nanjing University, Nanjing, China (zhoubinok@nju.edu.cn); ²College of Science and Engineering and ARC Centre of Excellence for Australian Biodiversity and Heritage, James Cook University, Cairns, Australia (michael.bird@jcu.edu.au); ³National Demonstration Center for Experimental Geography Education, School of Geography and Tourism, Shaanxi Normal University, Xi'an, China (bin.wang@snnu.edu.cn); ⁴School of Geography and Ocean Sciences, Nanjing University, Nanjing, China; ⁵Department of Environmental & Geographical Science, University of Cape Town, South Africa (michael.meadows@uct.ac.za); ⁶Department of Geography, Faculty of Arts and Social Sciences, National University of Singapore, Singapore (david.taylor@nus.edu.sg)



OSSP contest



QR for abstract