

**Supplementary Figure caption**

**S-Fig. 1.** The records of  $\delta^{18}\text{O}$  at Shihua Cave (a) in Beijing, Huangye Cave (b) and Wanxiang Cave (c) in Gansu, Dayu Cave (d) in Shanxi, Heshang Cave (e) in Hubei, Lianhua Cave (f) in Hunan and Dongge Cave (g and h) in Guizhou from top to bottom in 1950-2005.

