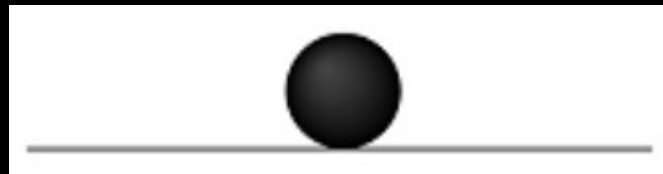
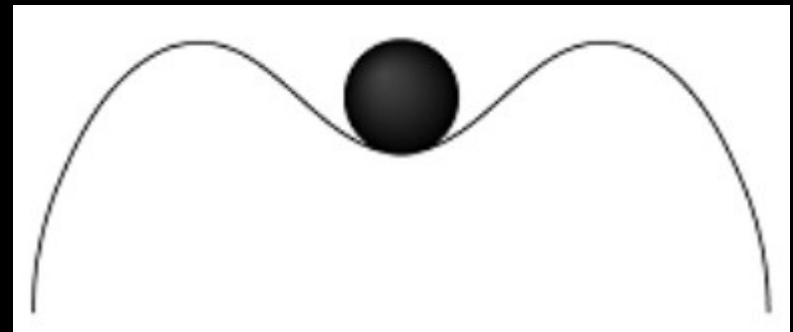
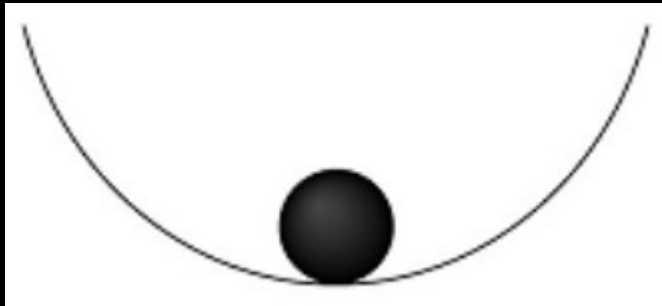
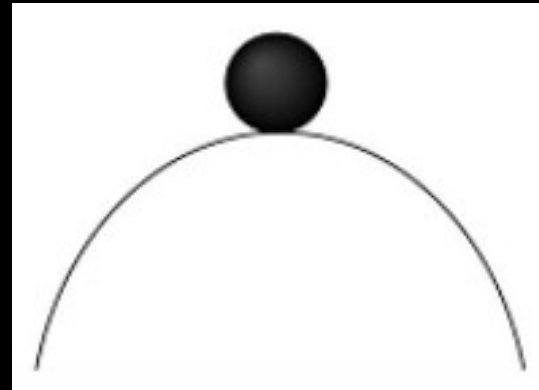
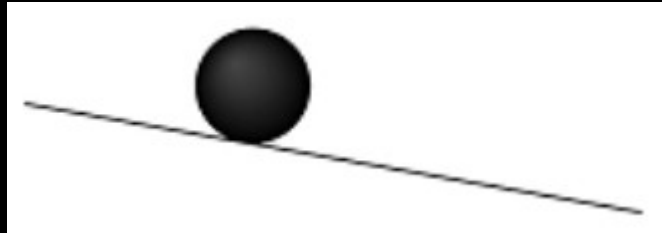


Základy ekologie a env. vědy 4

Paleoekologie

Paleoklima



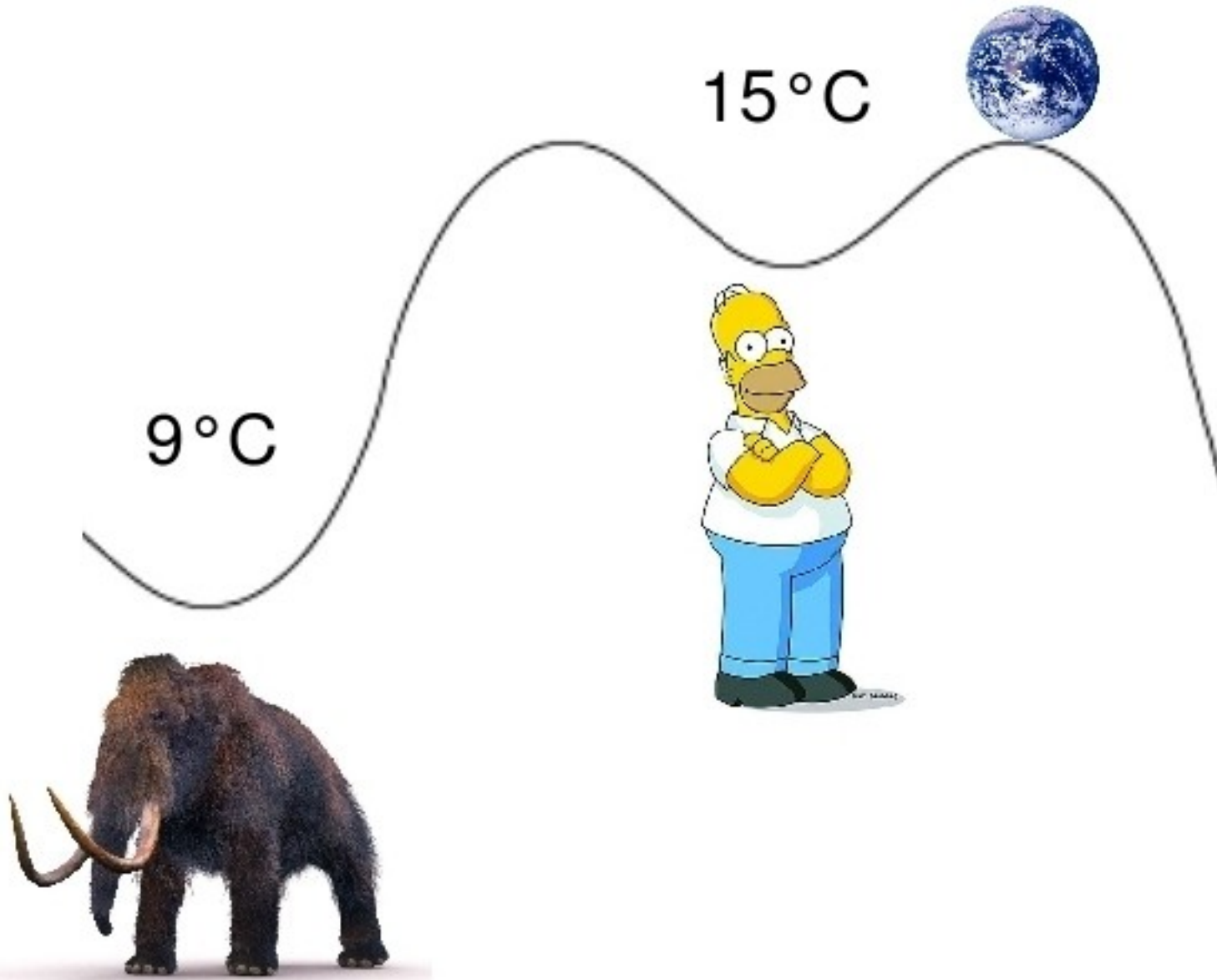


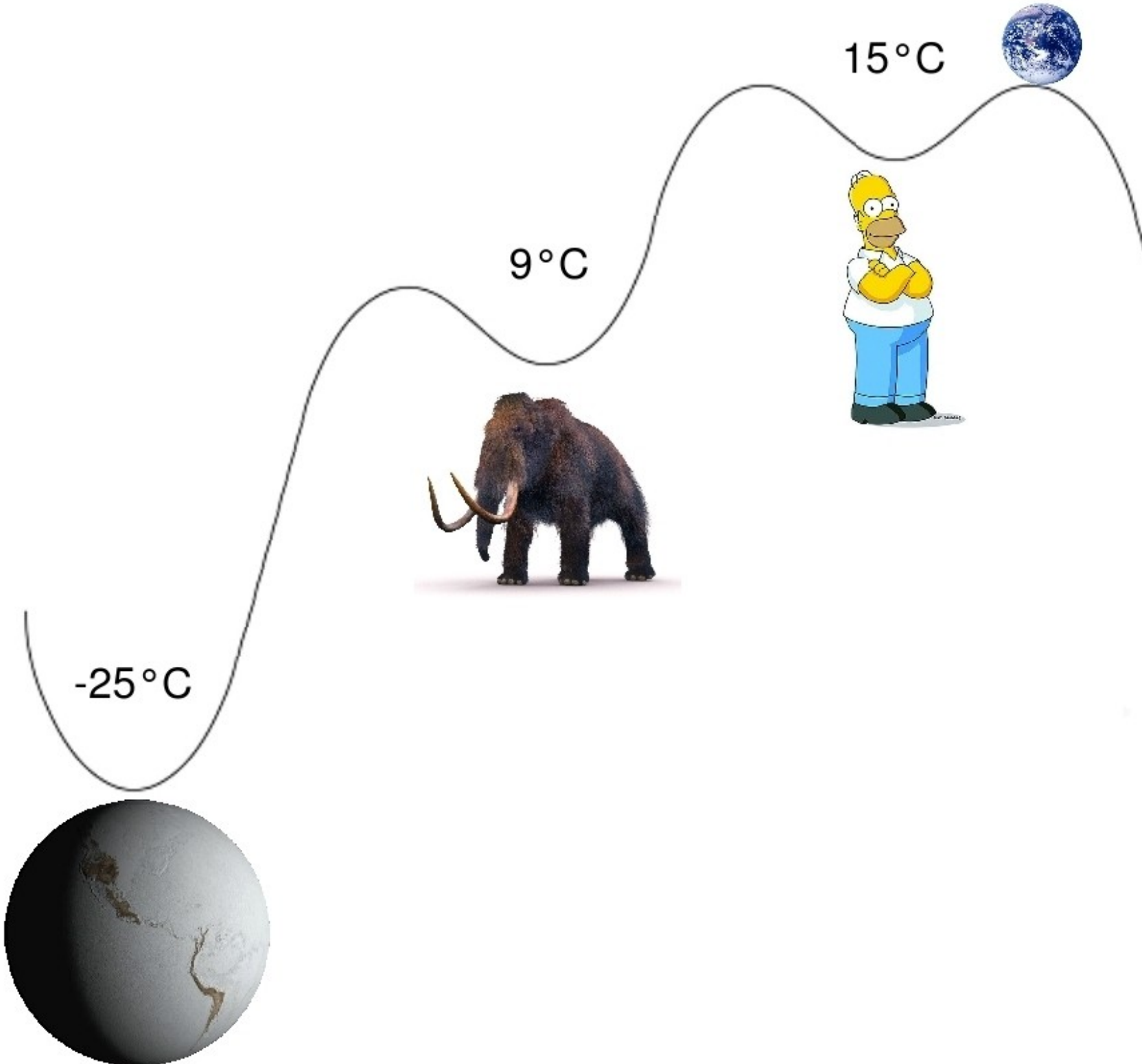
15°C

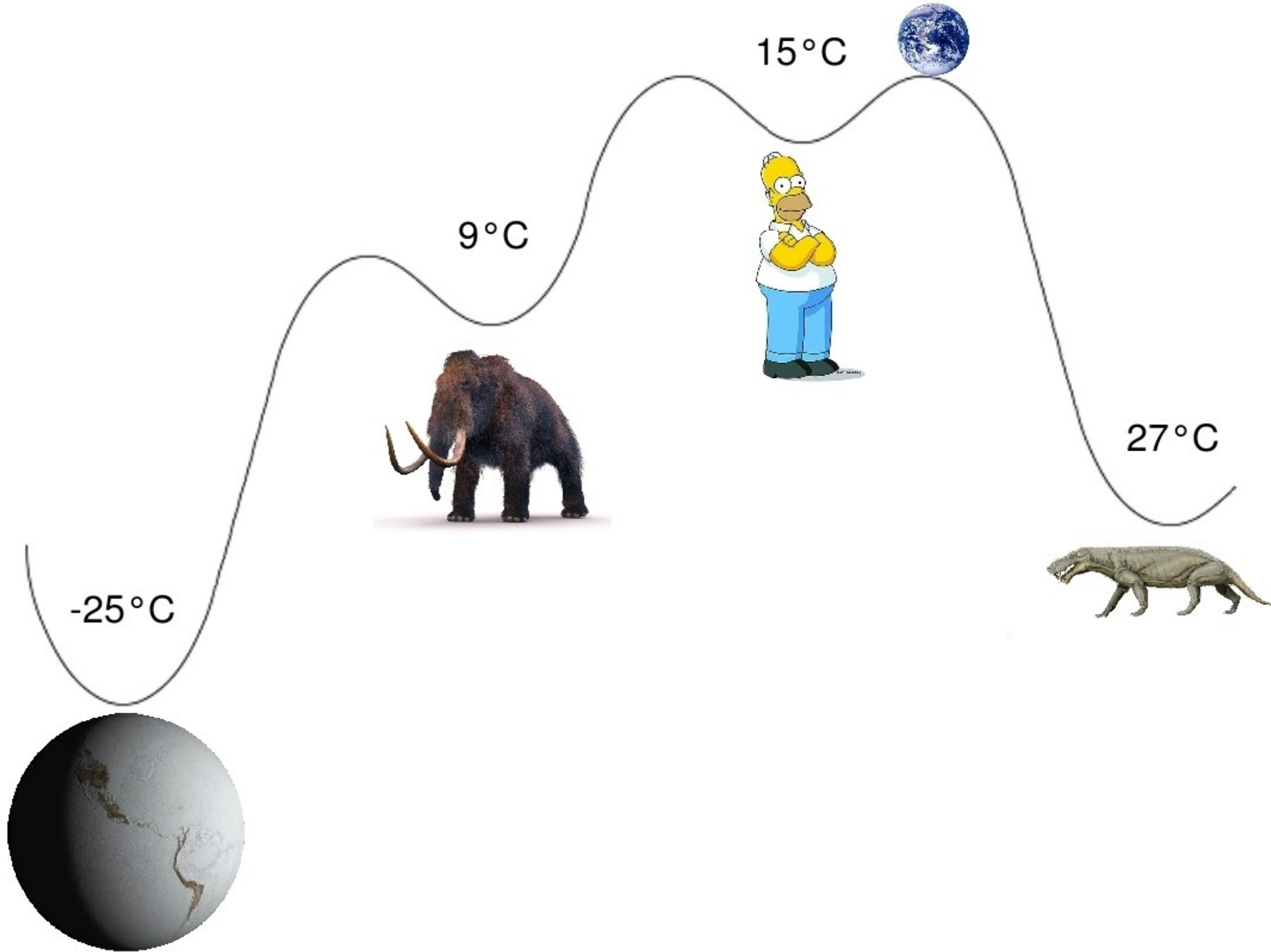


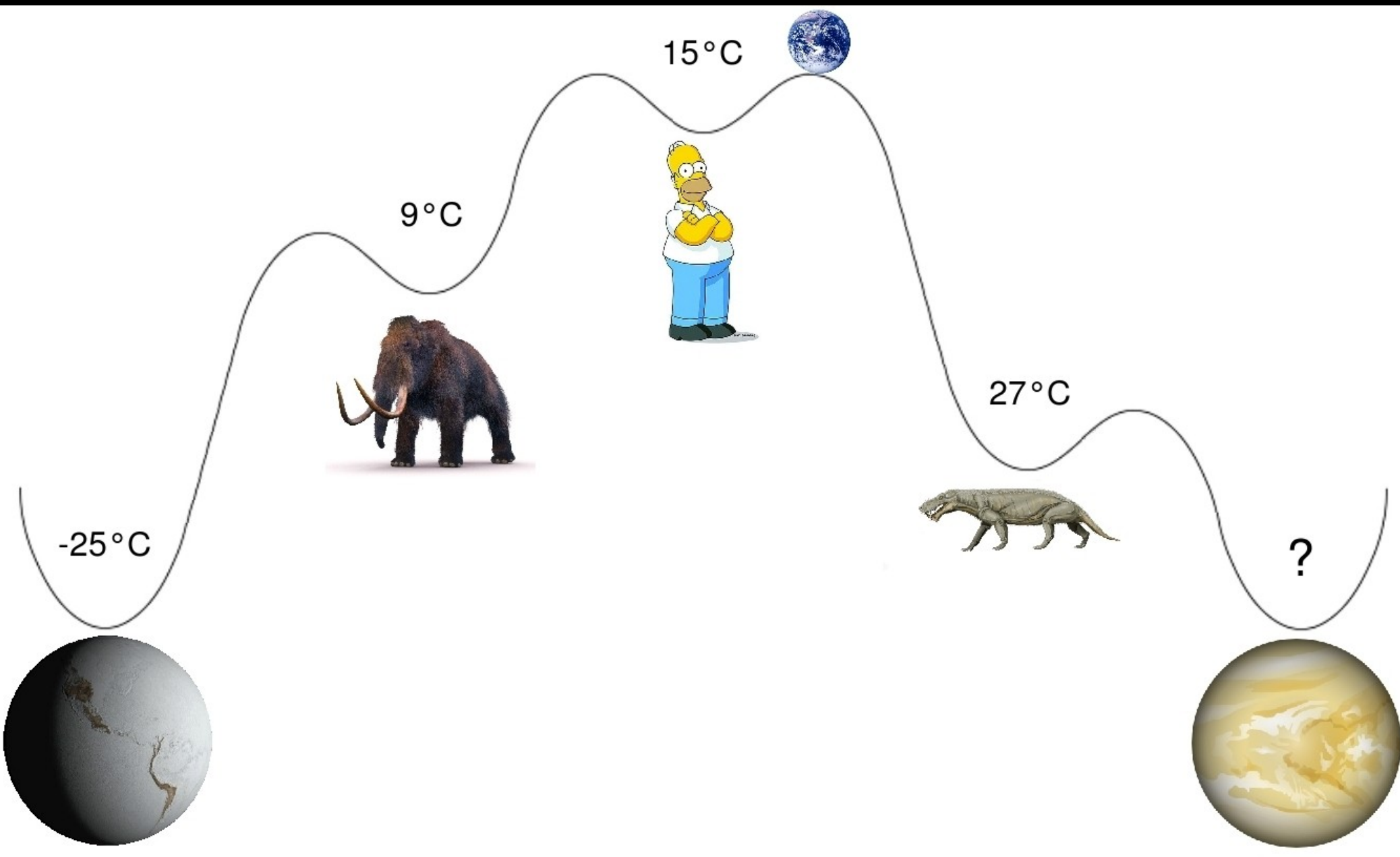
+2°C









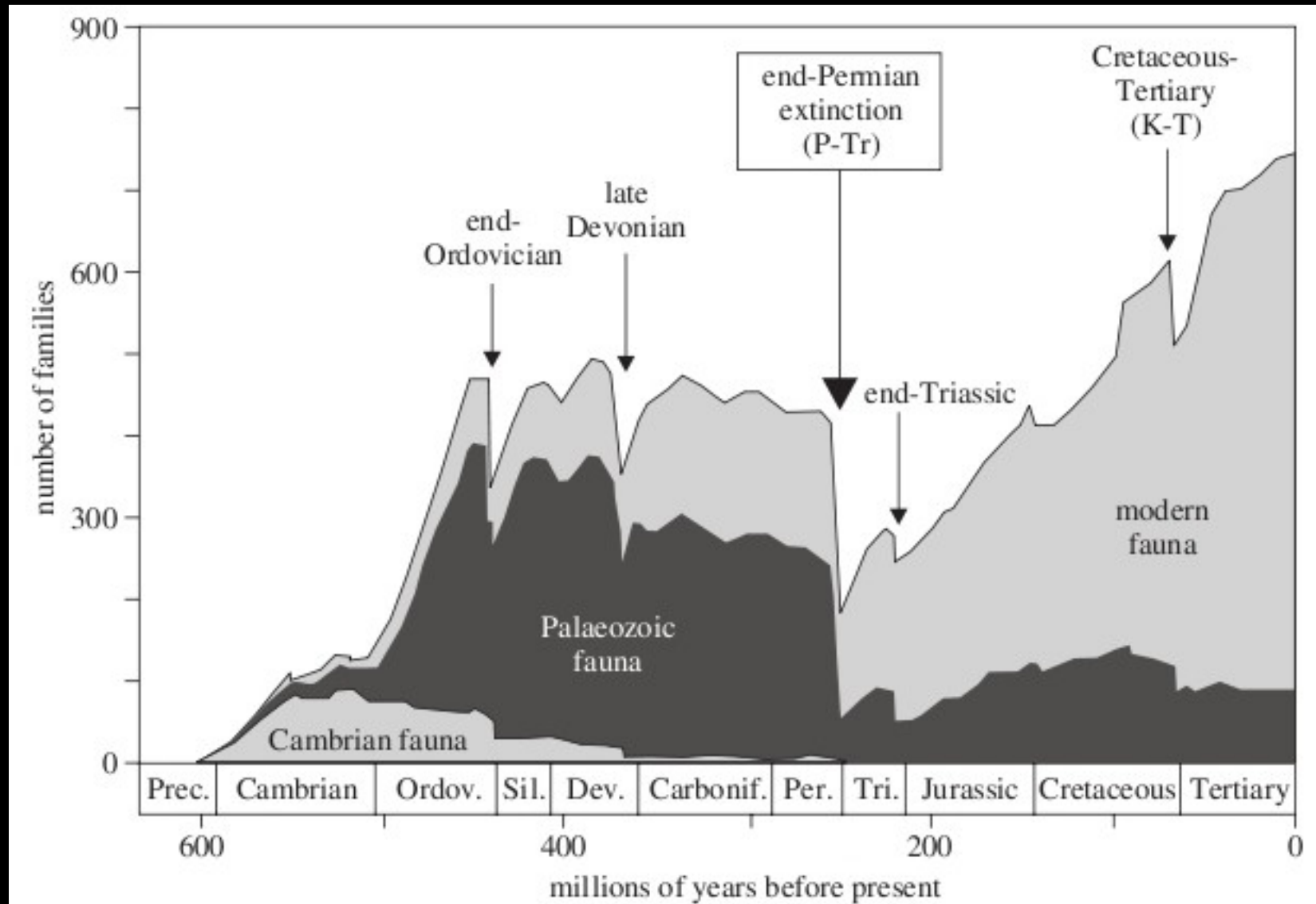




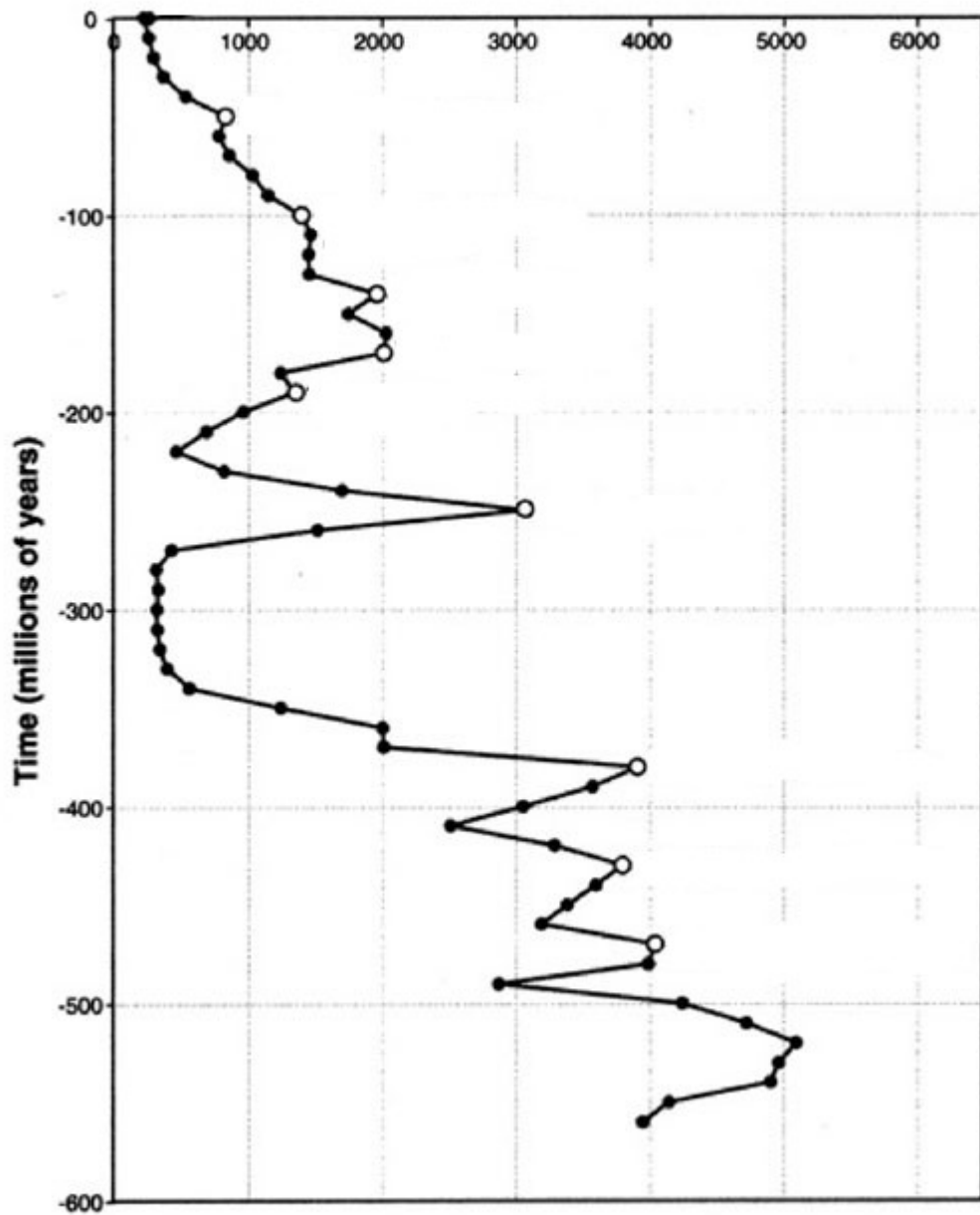
THE SNOWBALL EARTH



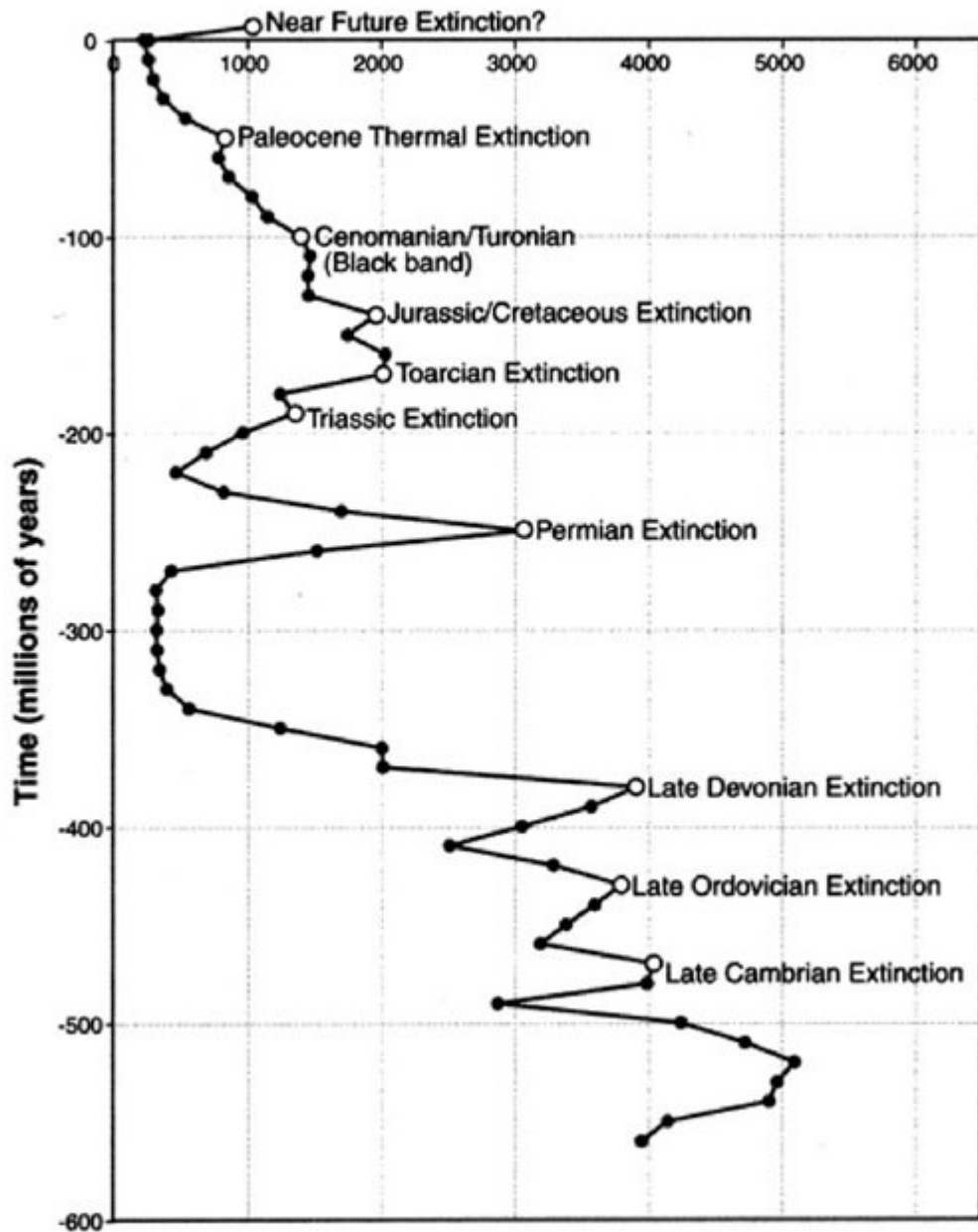
Biodiverzita a masová vymírání



Carbon dioxide levels (ppm)



Carbon dioxide levels (ppm)



Perm-Trias extinkce

před 251,4 miliony let

známé jako „velké vymírání“ (dosud největší)

Kontinenty před 250 miliony let

2966

R. V. White

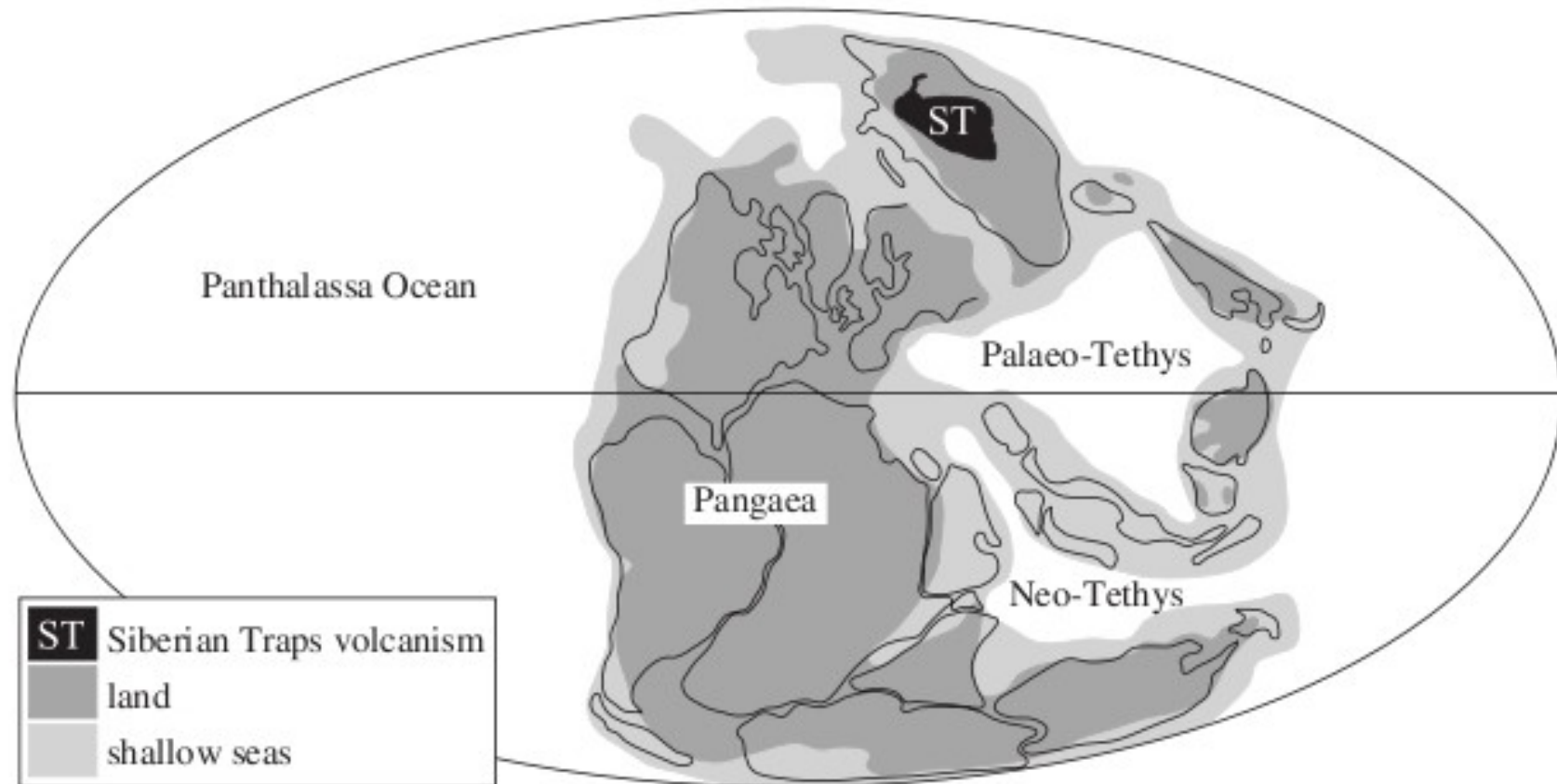
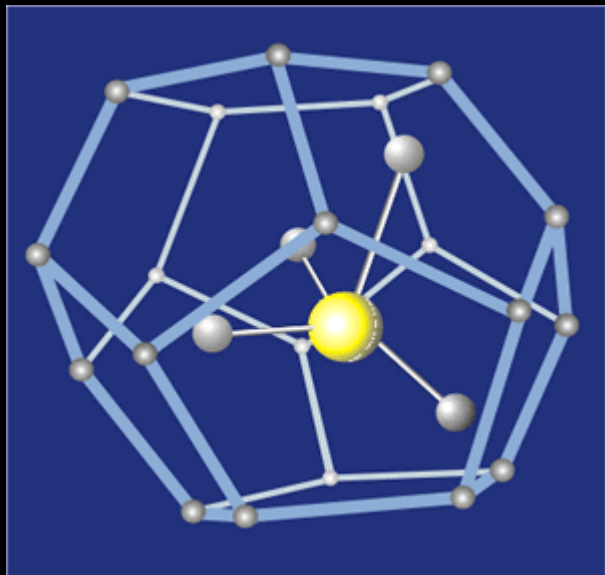


Figure 2. Reconstruction of Earth's landmasses 250 million years ago (compiled from Scotese *et al.* (1979) and Scotese & McKerrow (1990); Mollweide projection).

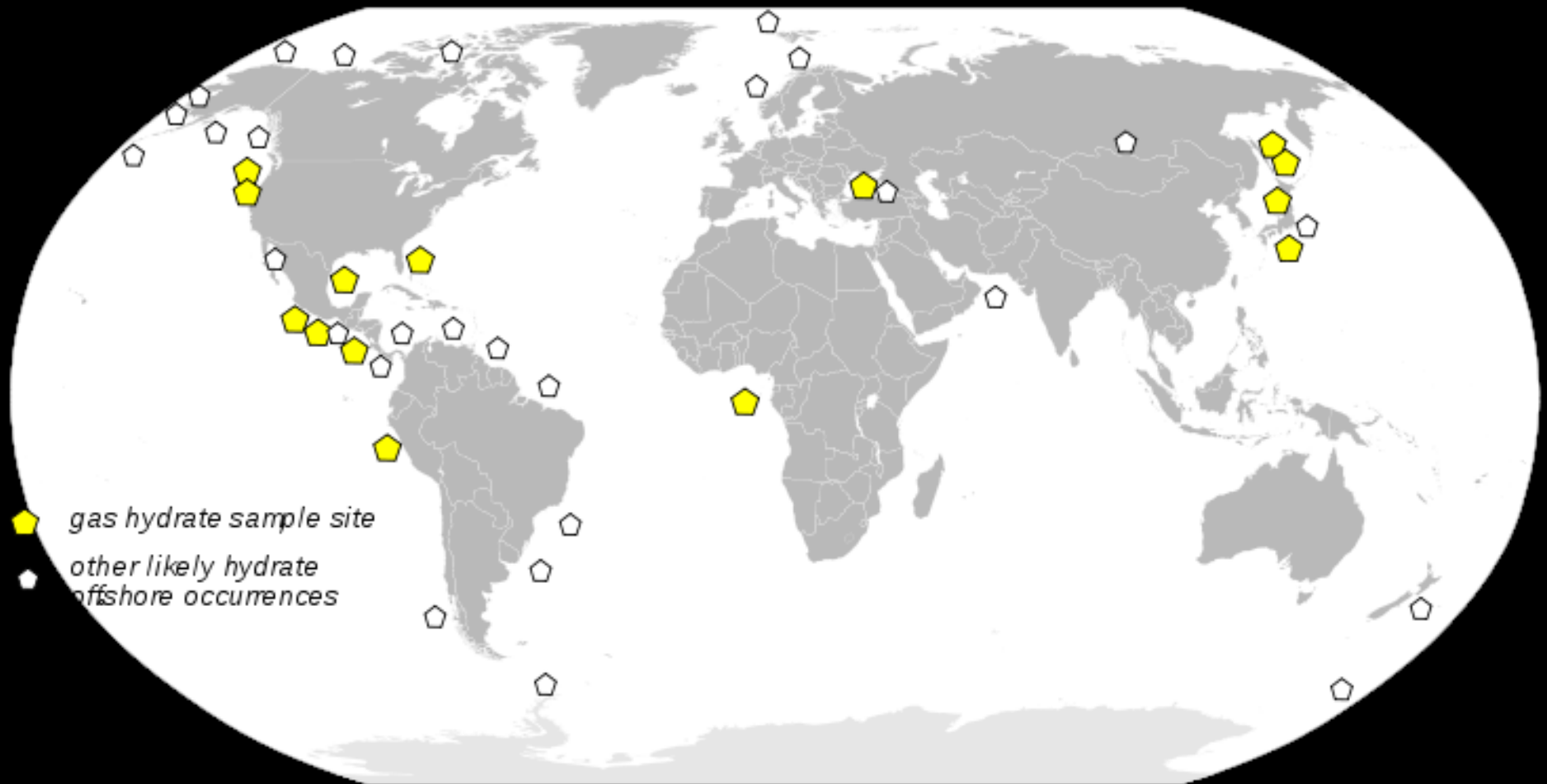
Siberian traps



Hydráty metanu



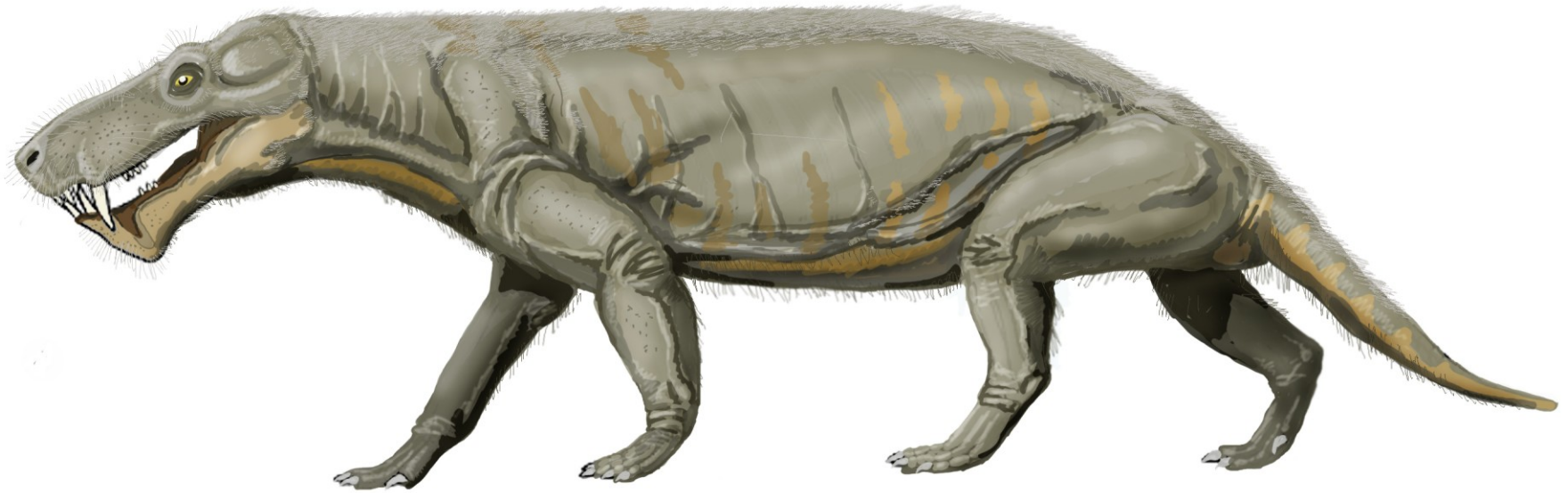
Potvrzená ložiska hydrátů metanu 1996



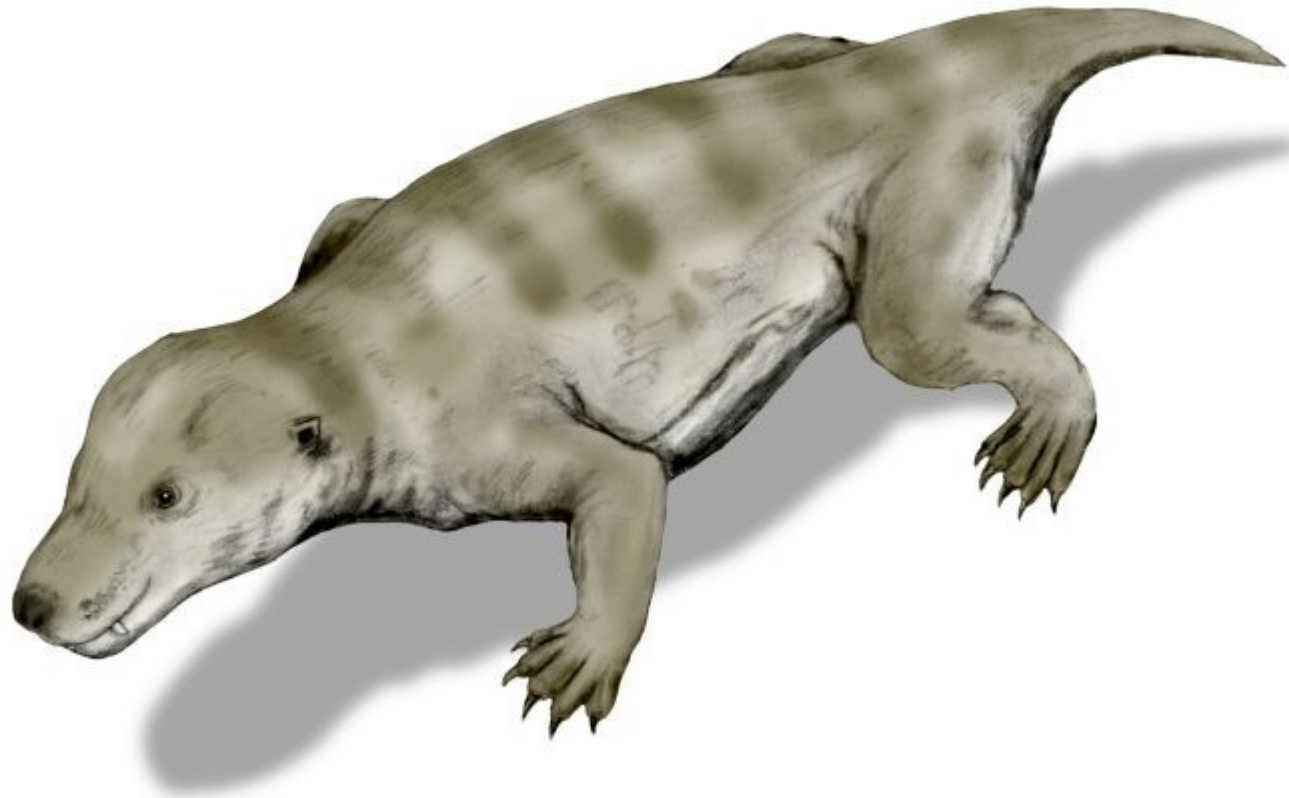
Sirovodík



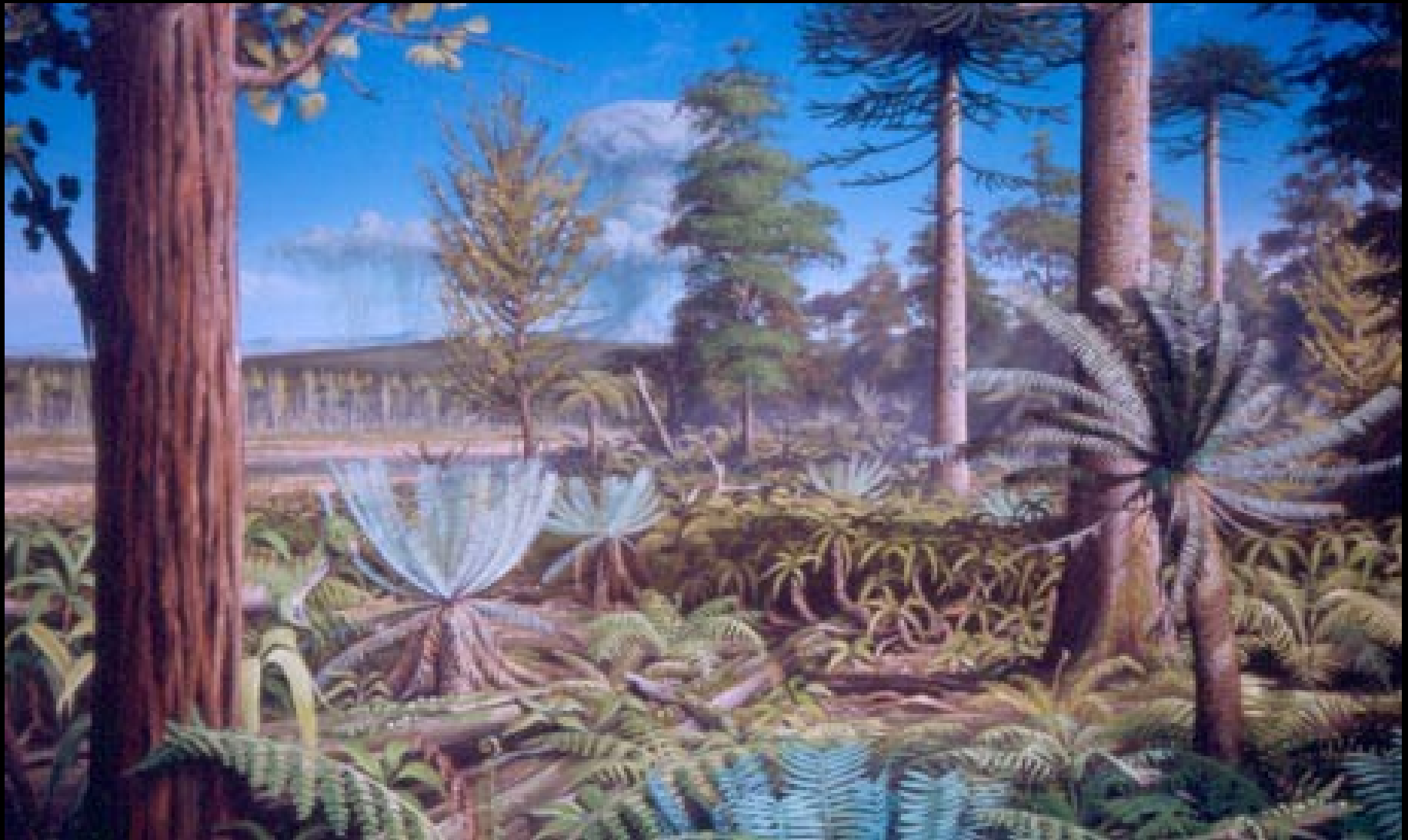
Gorgonopsia (Gorgon)
před 260 m. l. - 251 m. l.,
dominantní predátor pozdního
permu, dosahoval velikosti
nosorožce



Cynodontia (Kynodont)
před 260 m. l. – 200 m. l.
velikost kočky, přežil permské vymírání
=> společný předek savců



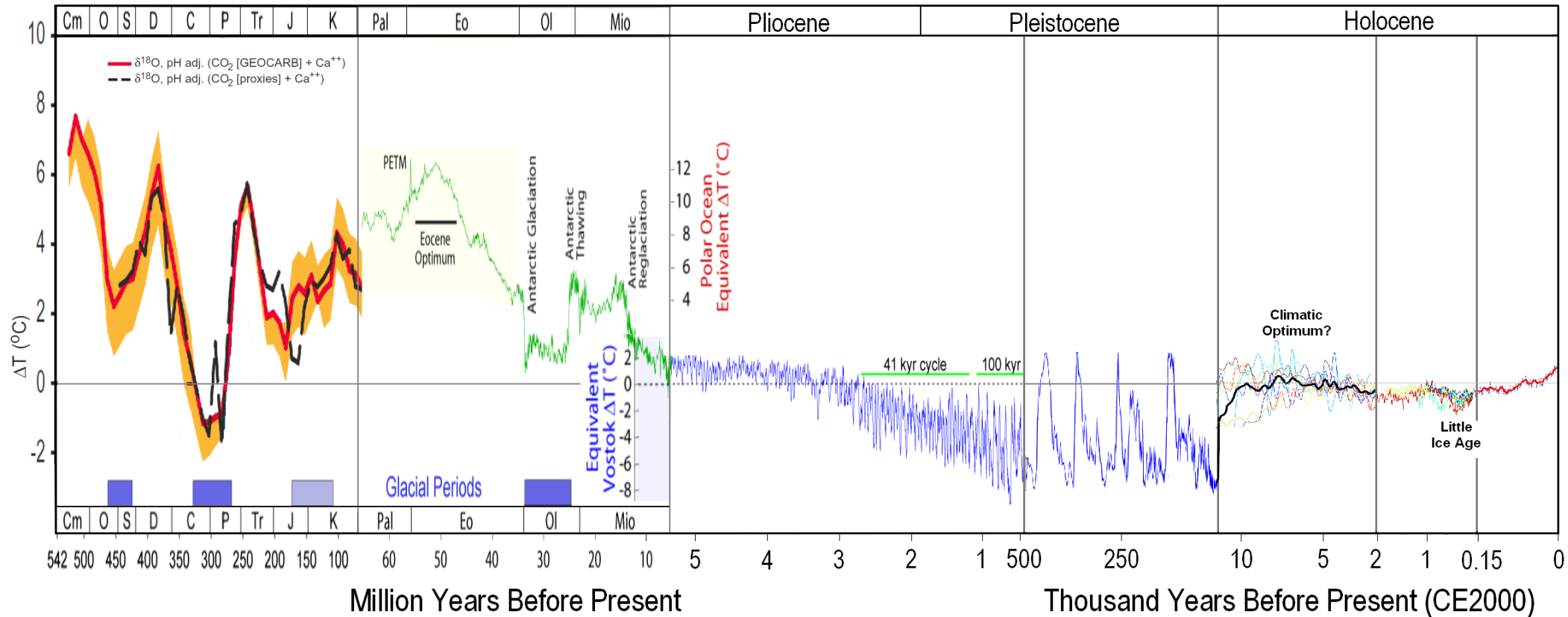
Antarktida před 100 miliony lety



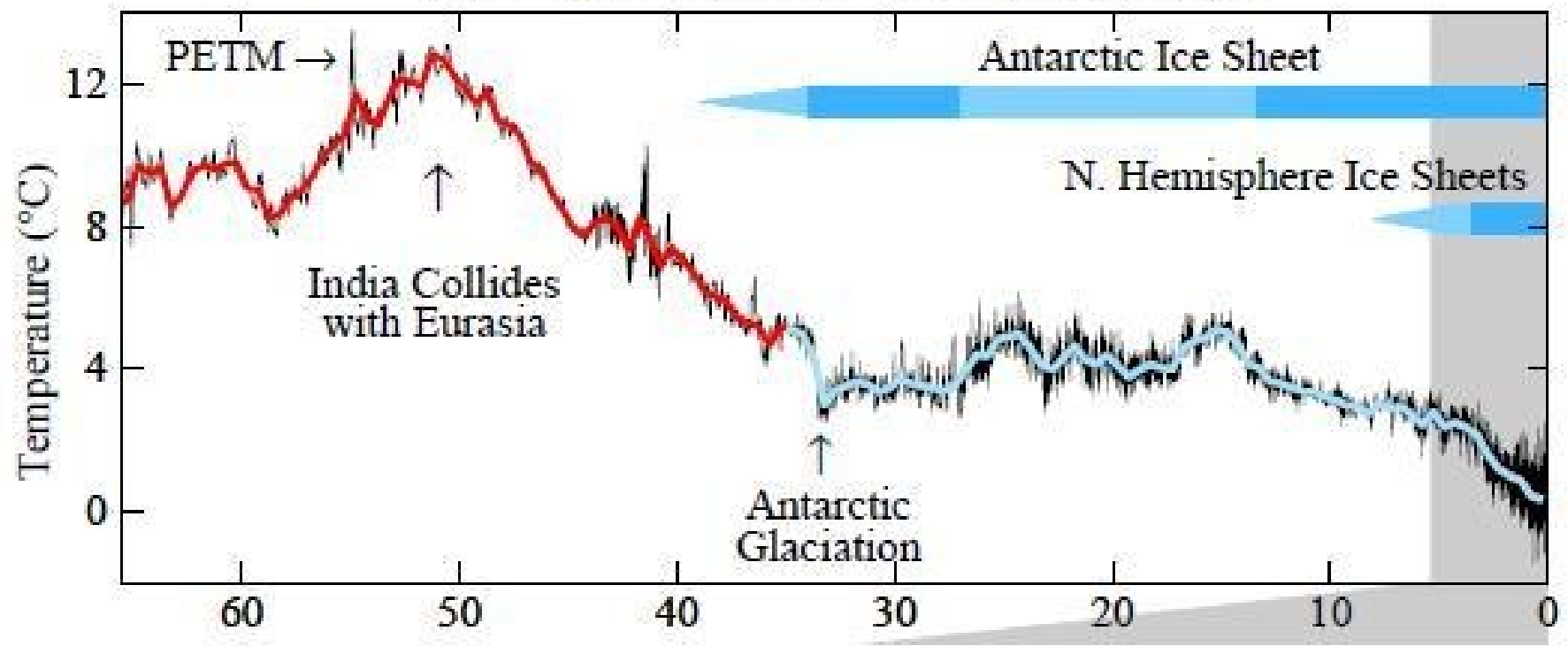
<http://www.guardian.co.uk/world/2011/jul/17/antarctica-tropical-climate-co2-research>

Teplota Země za 550 milionů let

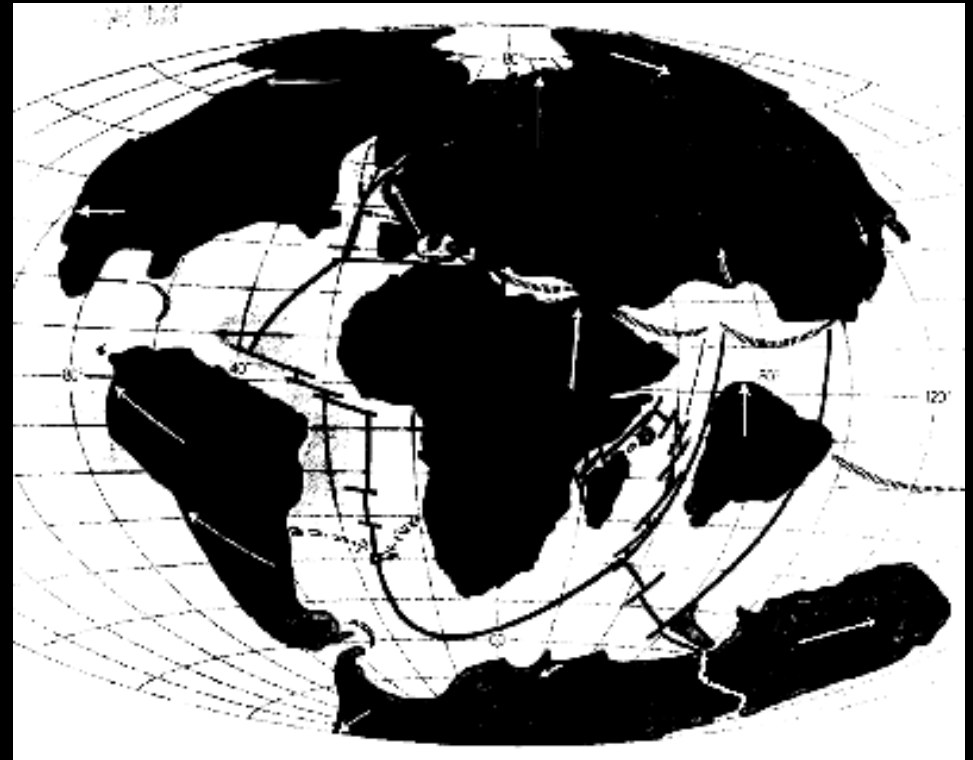
Temperature of Planet Earth



(a) Cenozoic Era (65.5 Million Years)



Kontinenty před 65 miliony let K-T extinkce



Období před 60 – 50 miliony let

Indie se pohybovala rychlostí 20 cm/rok

Vulkanická činnost v Indii způsobila růst koncentrace CO₂ rychlostí 0,0001 ppm/rok

*Dnes roste CO₂ rychlostí 2 ppm/rok
tj. 20000 x rychleji*

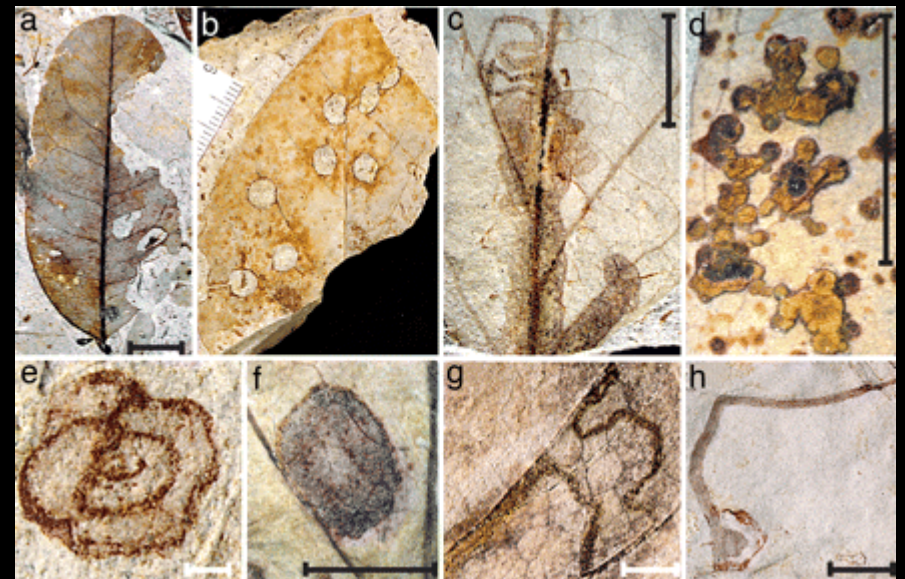
Antarktida se začala zaledňovat při CO₂ < 450 ppm

PETM Paleocén-Eocén Termální Maximum

Před 55 miliony let

Rychlý přísun uhlíku do atmosféry
(pravděpodobně z hydrátů metanu)

Rychlé oteplení, změny v ekosystému, invaze hmyzu



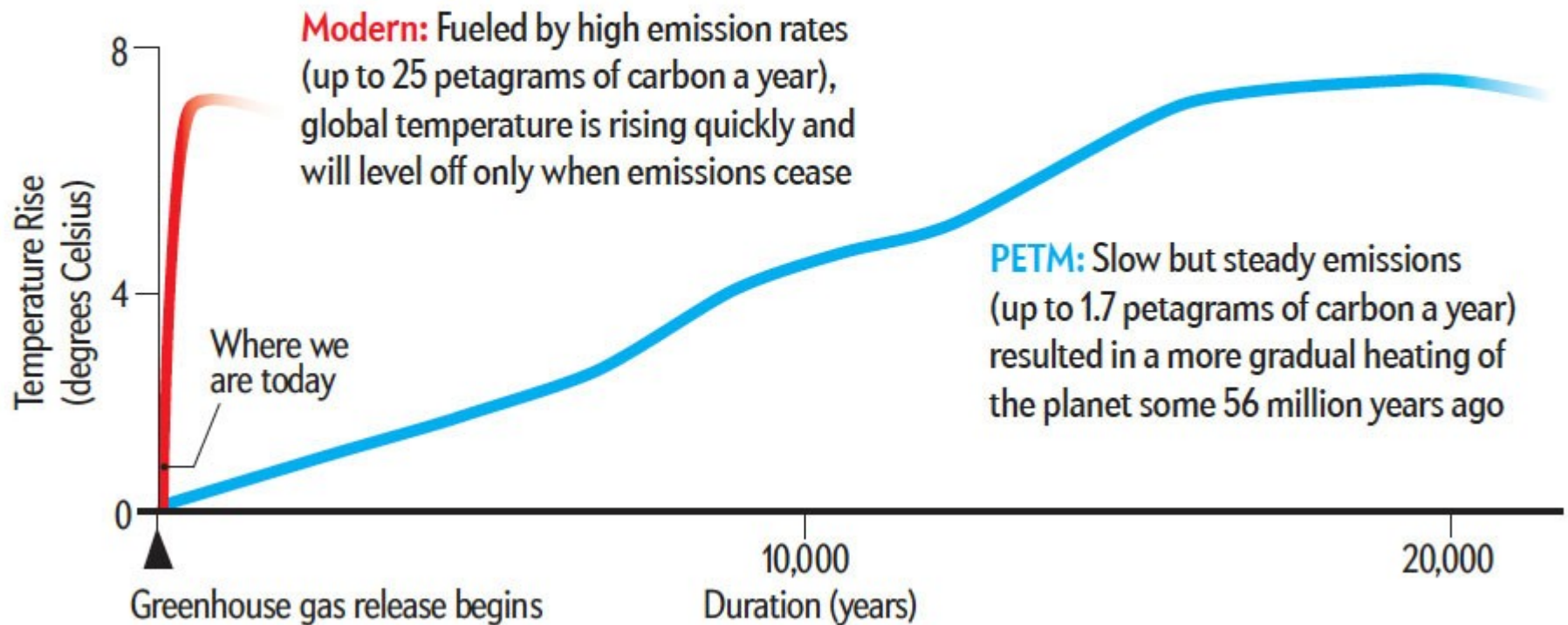
<http://www.pnas.org/content/105/6/1960.full>

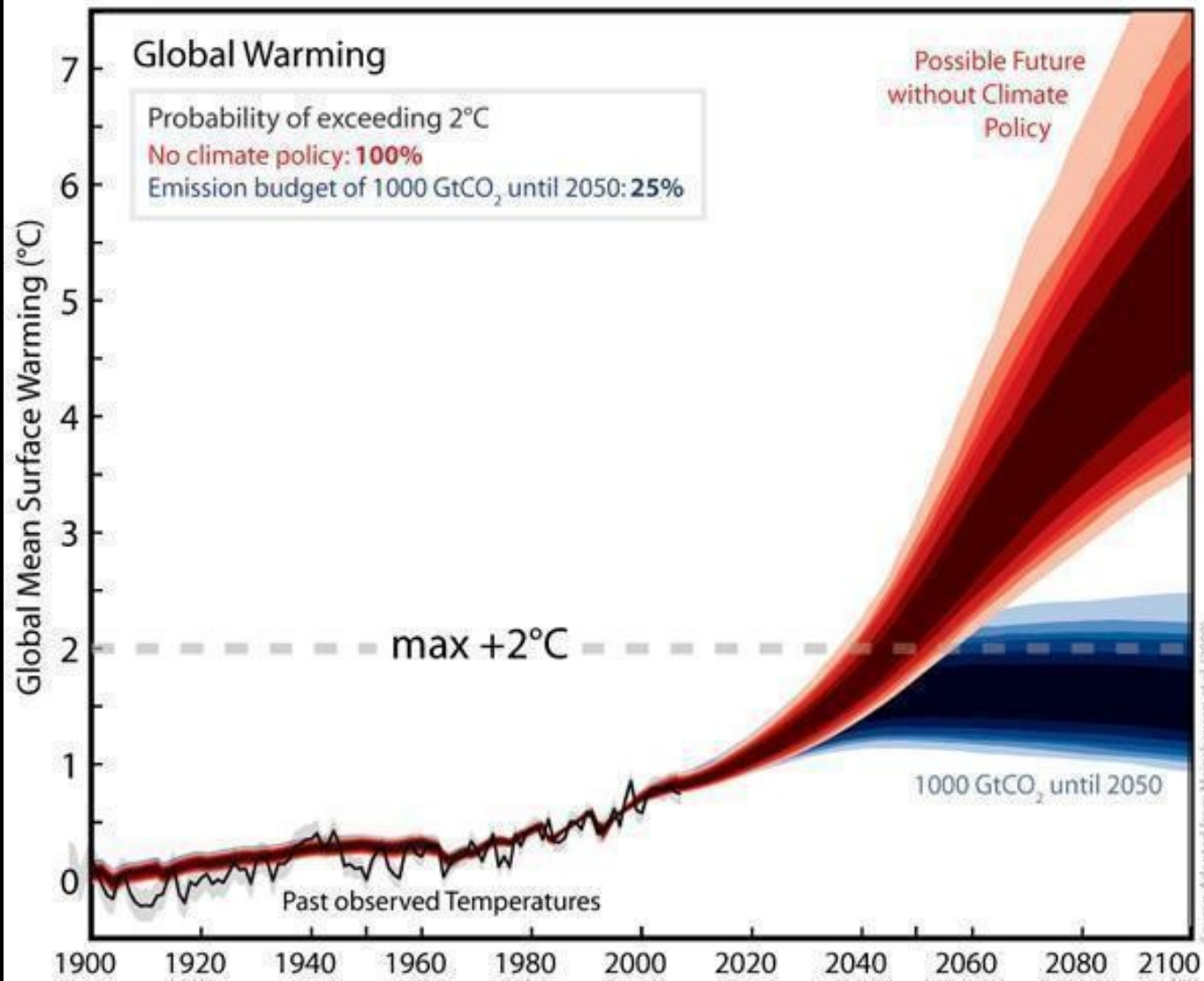
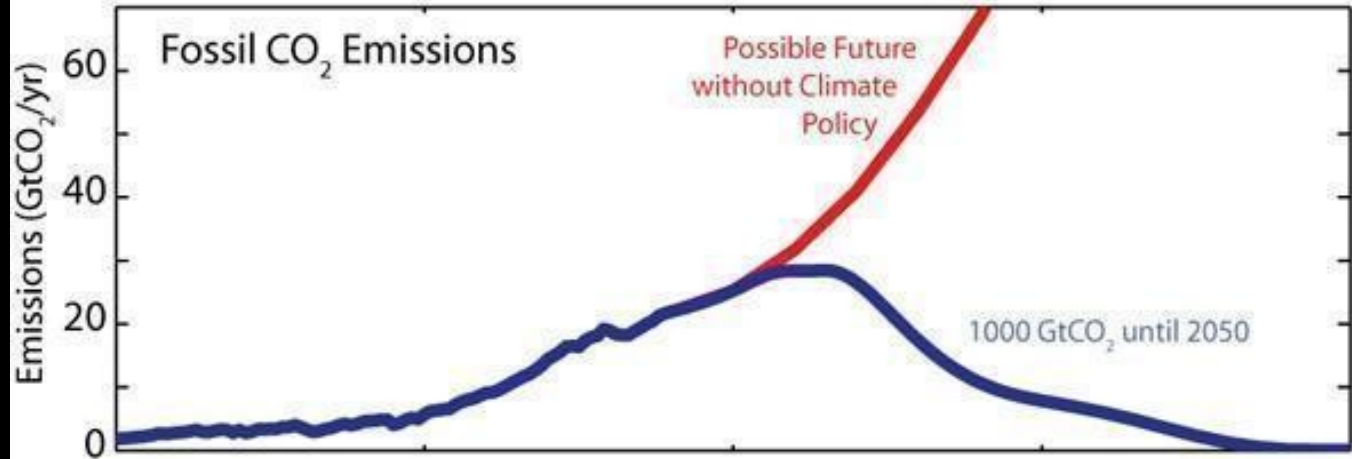
|

<http://ngm.nationalgeographic.com/2011/1>

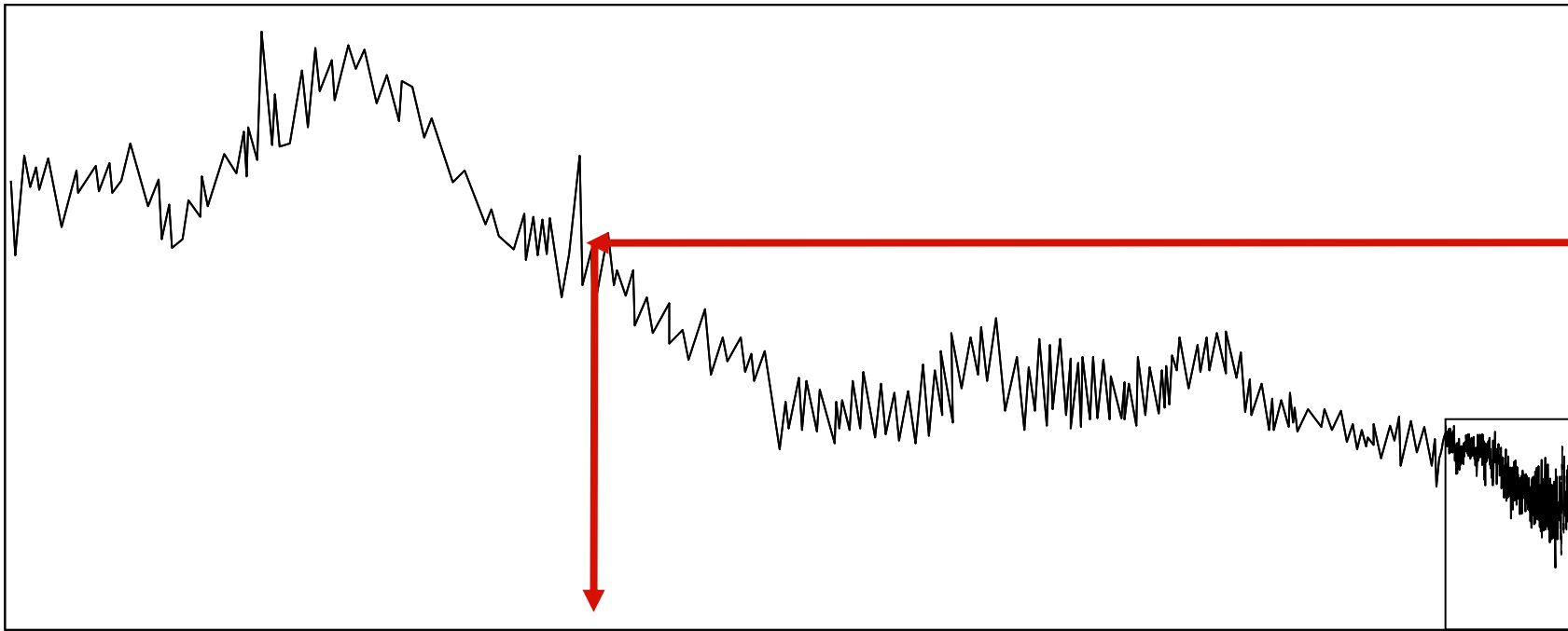
Rychlost oteplování PETM a dnes

Global temperature is rising much more quickly today than it did during the PETM

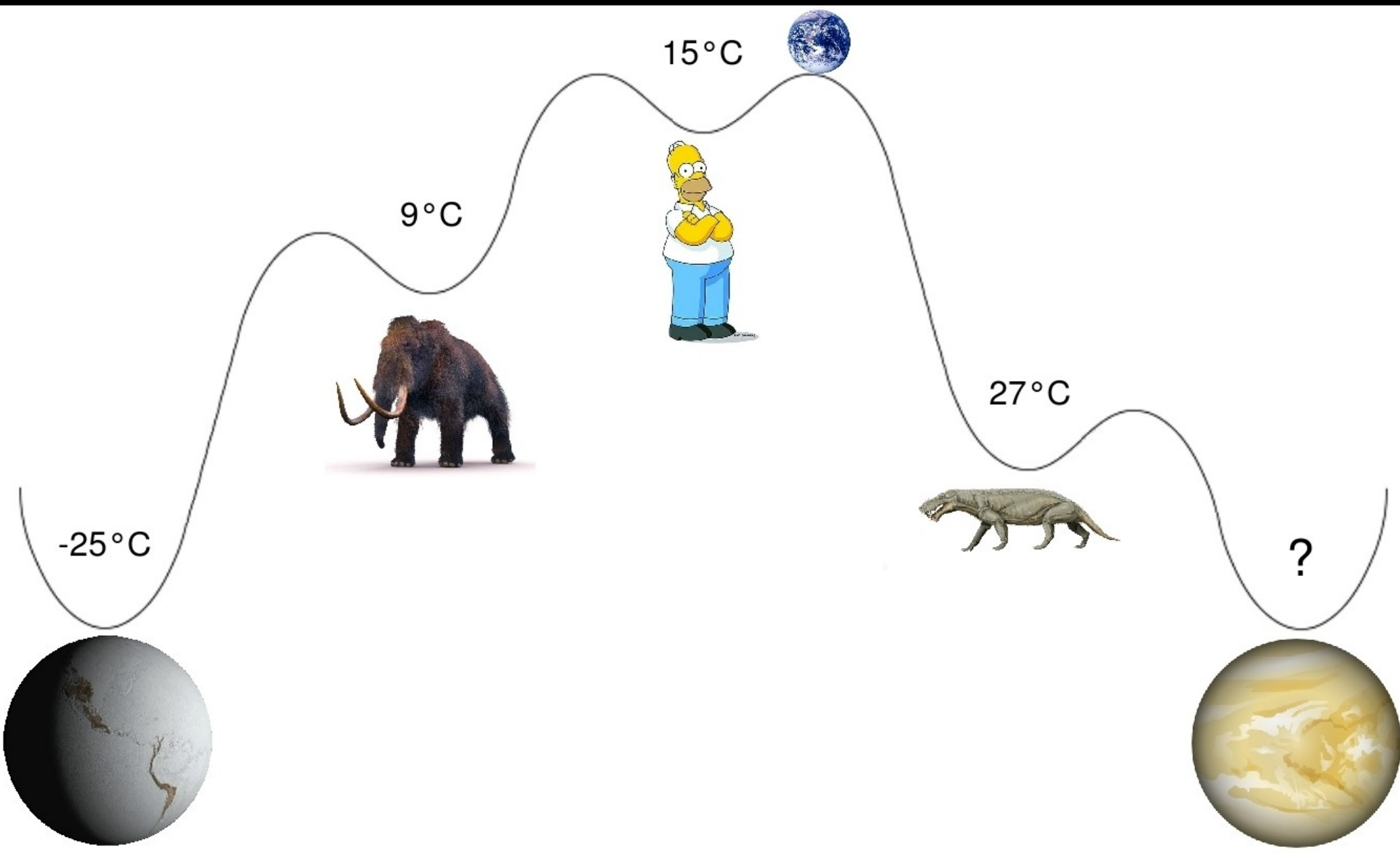




Oteplení o 6°C



40 mil. let



Observed CO₂ Emissions vs. IPCC Scenarios

