UNIVERSITÉ DE GENÈVE
FACULTY OF SCIENCE
Department of Earth Sciences

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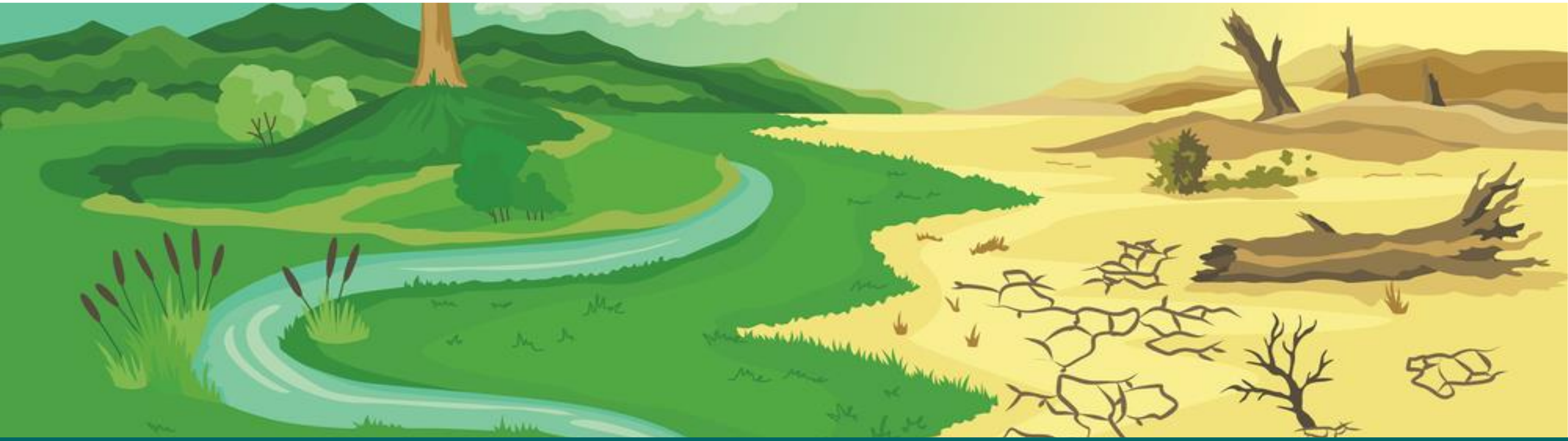
SOCIÉTÉ DE PHYSIQUE ET D'HISTOIRE NATURELLE DE GENÈVE

Intense precipitation during the African Humid Period inferred from east Saharan fossil rivers: Implications for human dispersal

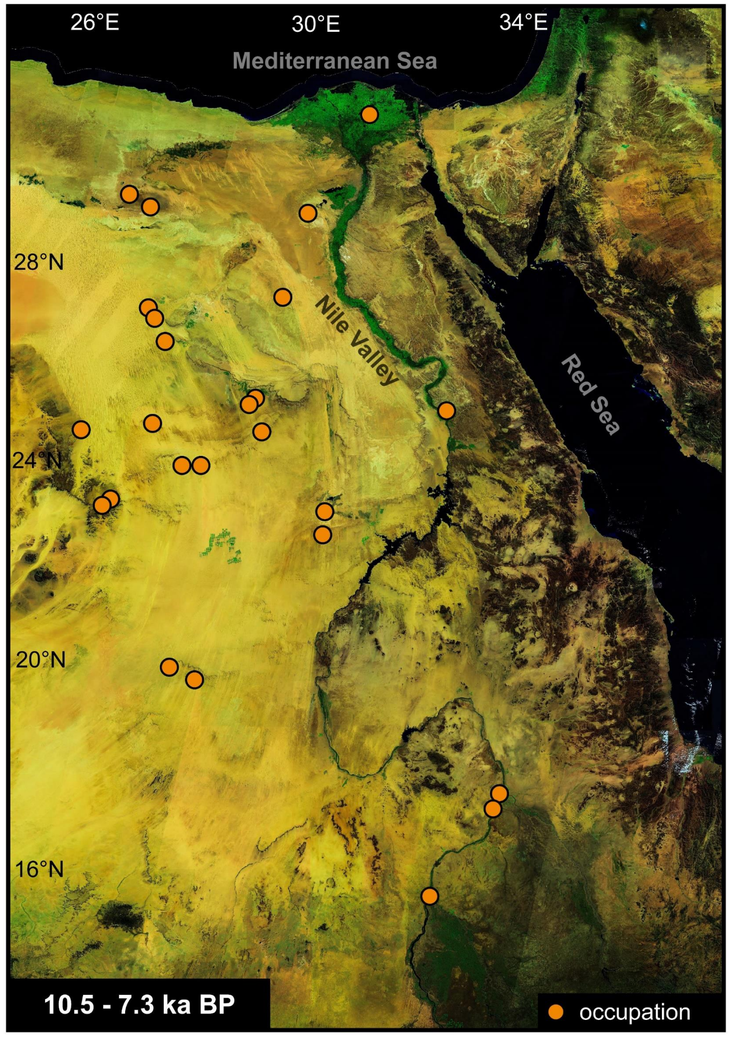
Abdallah S. Zaki, Georgina E. King, Negar Haghipour, Robert Giegengack, Stephen E. Watkins, Sanjeev Gupta, Mathieu Schuster, Hossam Khairy, Salah Ahmed, Mostafa El-Wakil, Saleh A. Eltayeb, Frédéric Herman, and Sébastien Castelltort

Past ⟶ **Present-day**



WHEN THE SAHARA WAS GREEN

Climate-driven occupation



Zaki et al., 2021, *QSR., 272(15)*

Climate-Controlled Holocene Occupation in the Sahara: Motor of Africa's Evolution

Rudolph Kuper and Stefan Kröpelin*

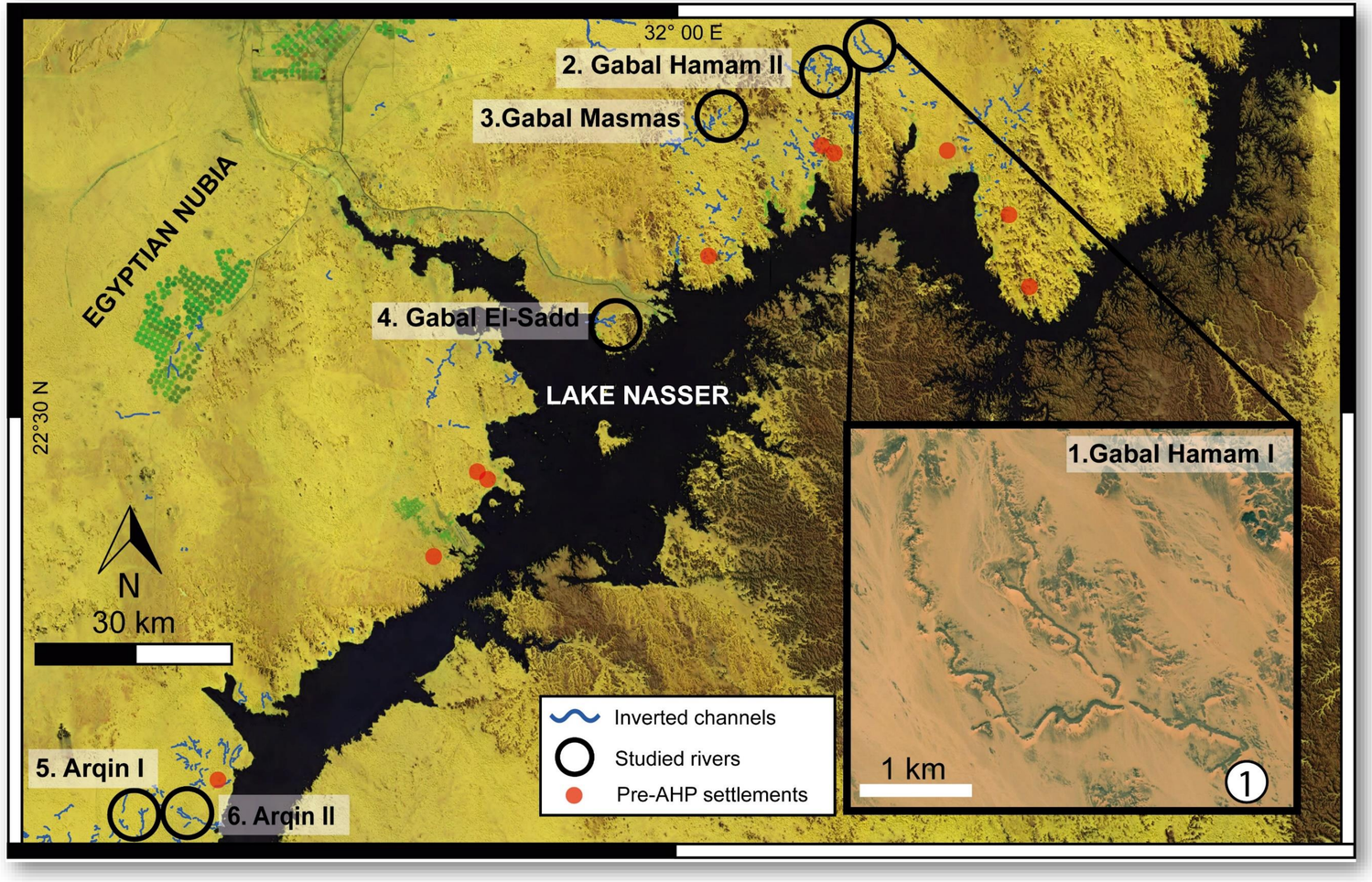
Kuper and Kropelin, 2006, Science, 5788

~300-~900 mm/yr

INTENSITY?

DID INTENSE RAINFALL FORCE THE MIGRATION OF HUMANS AWAY FROM THE NILE VALLEY DURING THE LAST GREEN SAHARA?

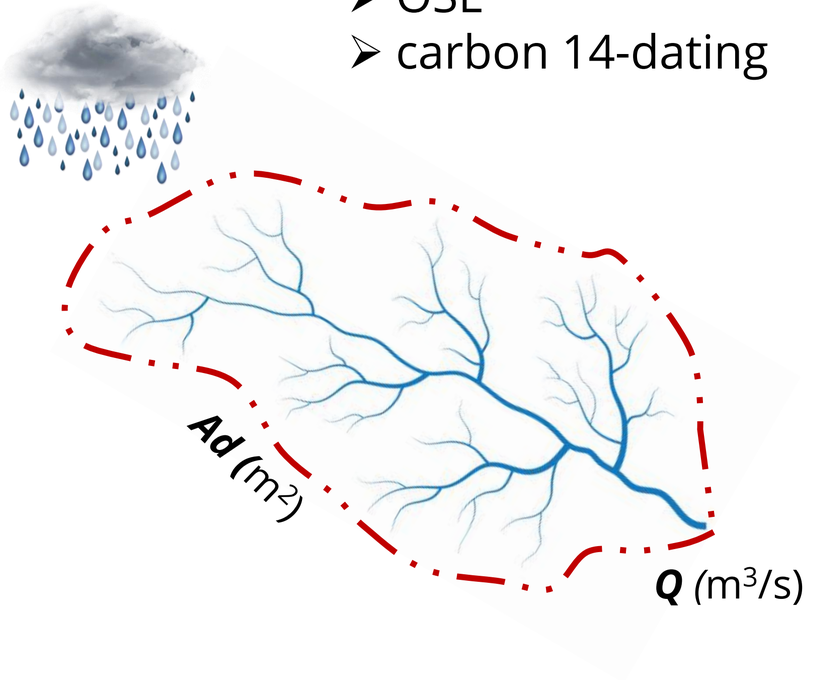
HOW TO CALCULATE RAINFALL RATES



Zaki et al., 2021, *QSR., 272(15)*

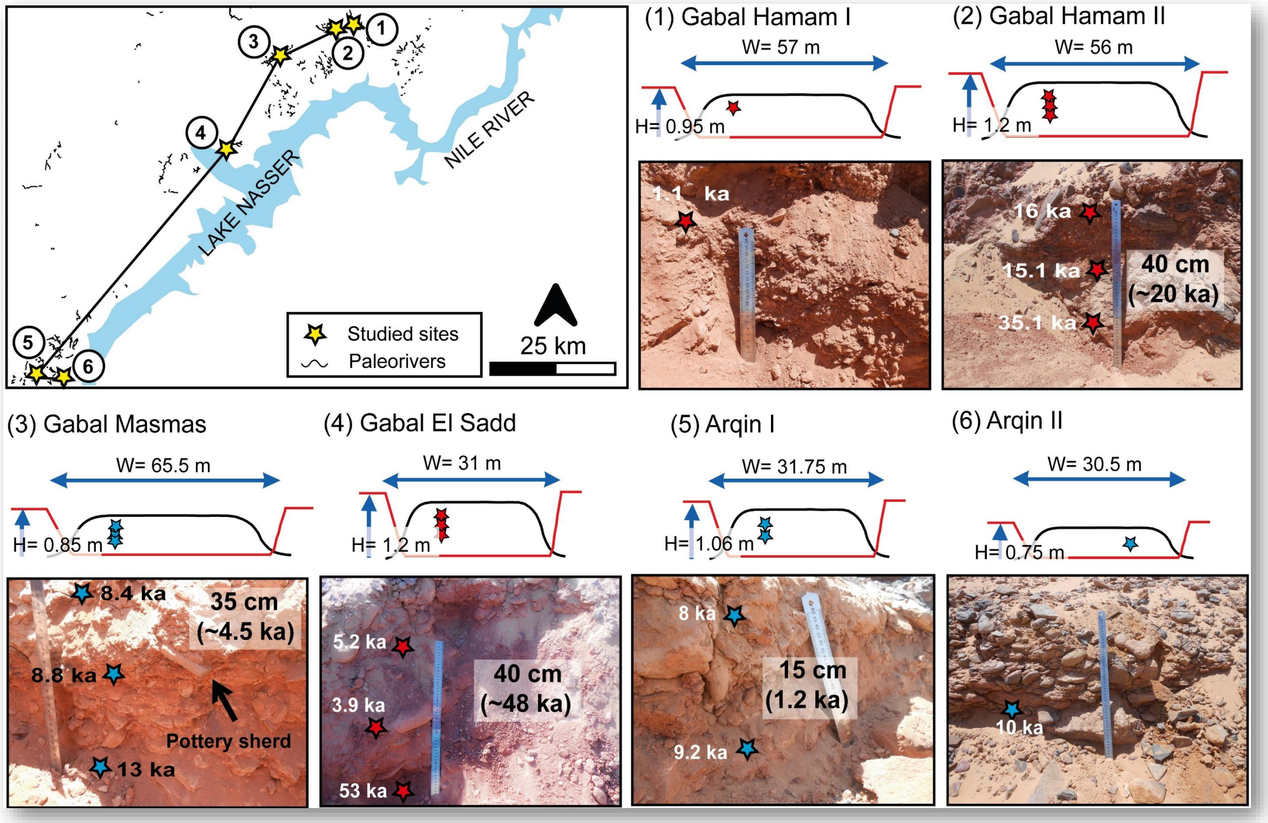
AGE

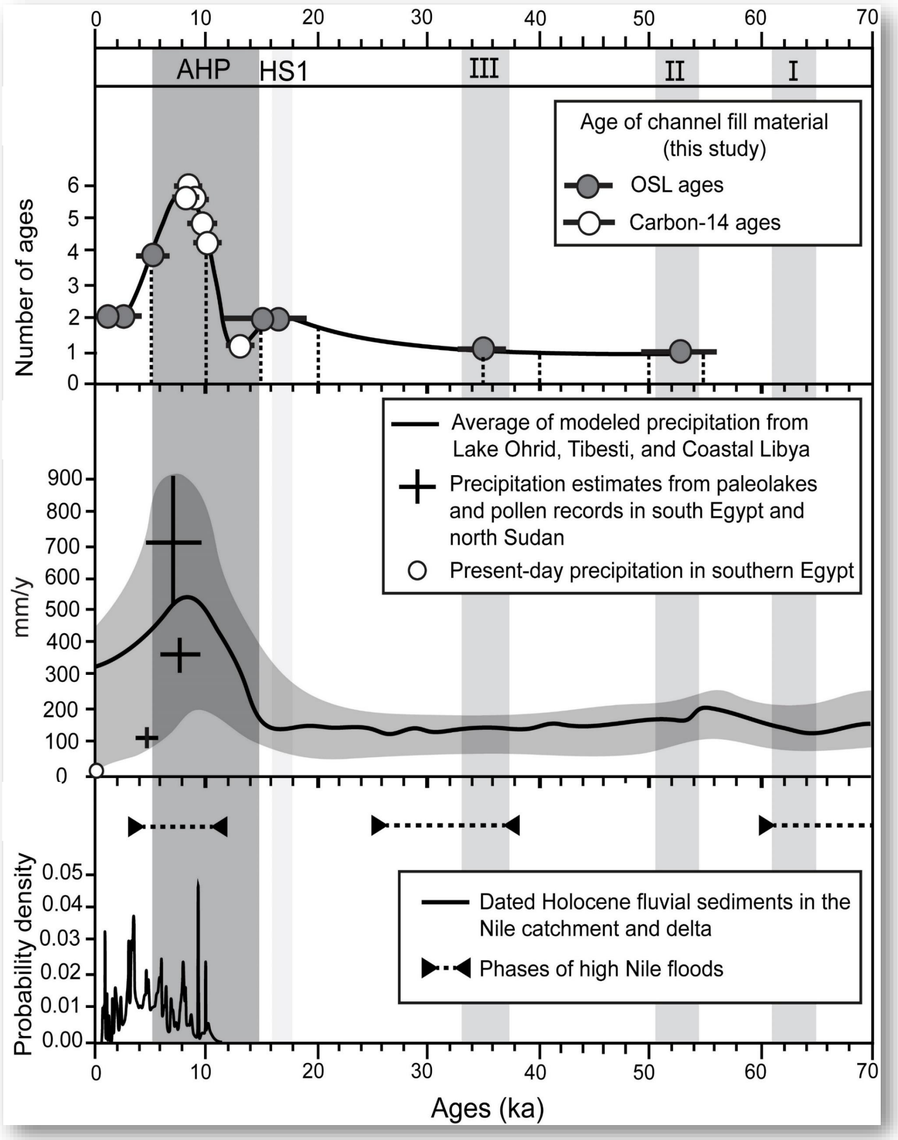
- OSL
- carbon 14-dating



Precipitation rate= Q/Ad= m/s

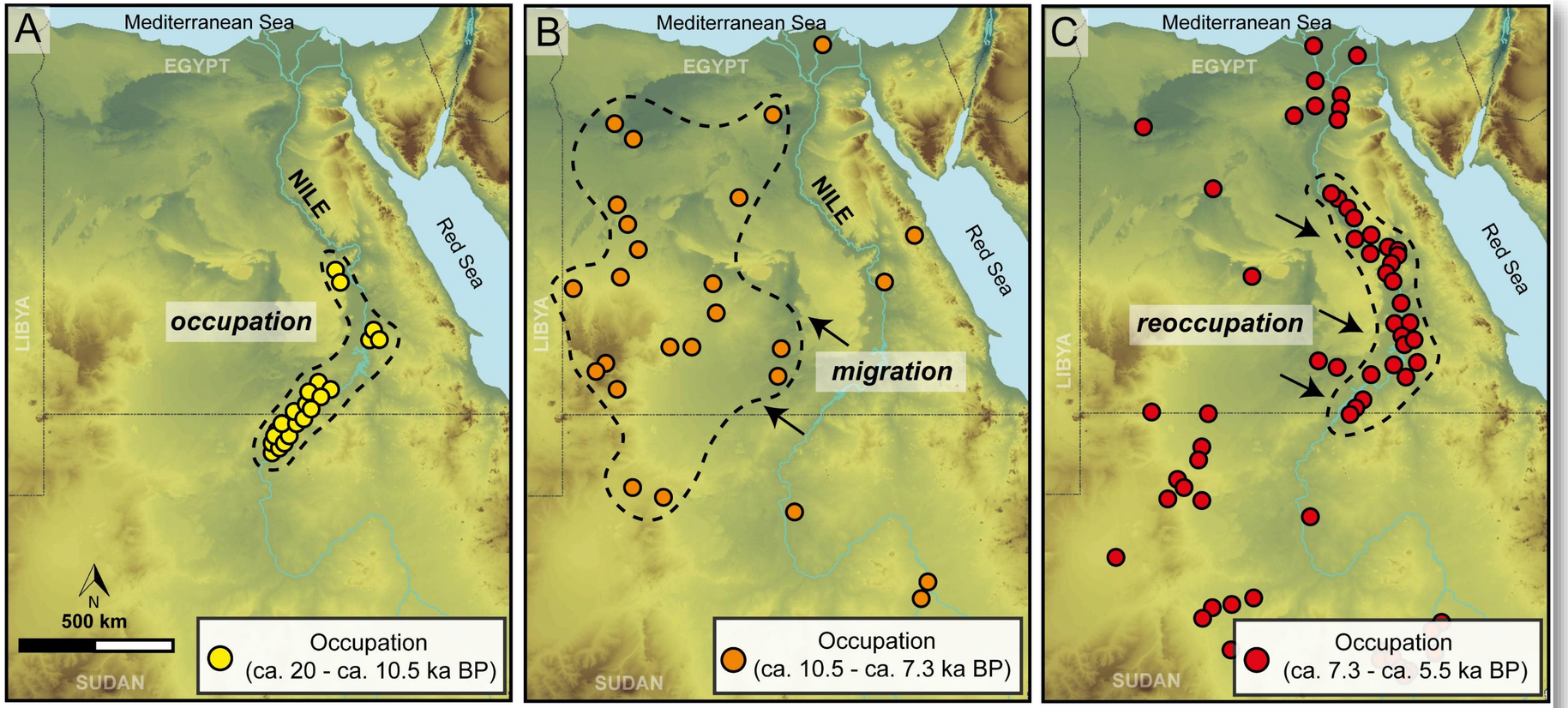
RESULTS

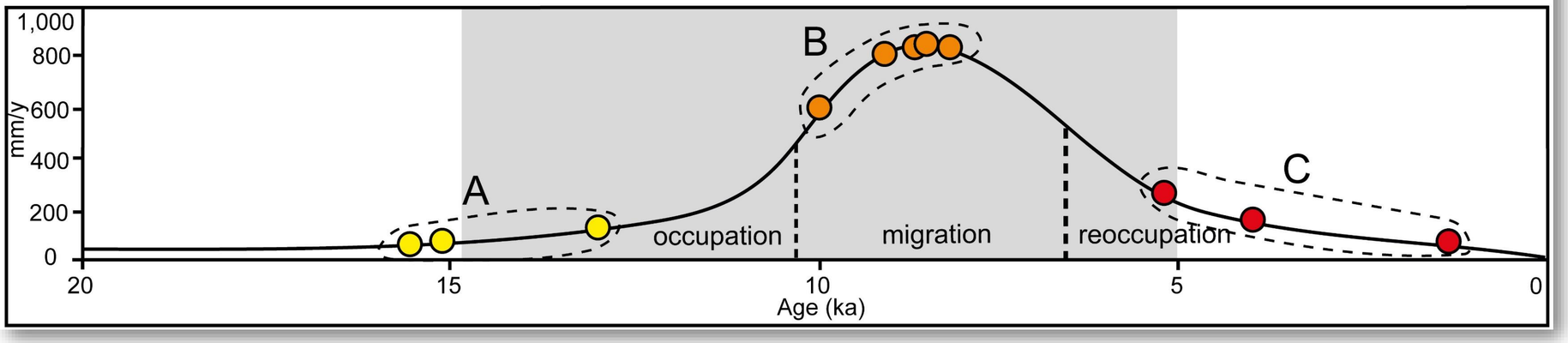




- **Torrential rainfall events** range from **55 to 80 mm/h** during sediment transport events
- The ages cluster within **15-5.2 ka**
- Preserved age-thickness relationships indicate **faster sedimentation rates** between 15-5.2 ka

Zaki et al., 2021, *QSR., 272(15)*





Zaki et al., 2021, *QSR., 272(15)*

TO CONCLUDE

Human migration from the Nile Valley was likely driven by increased flooding along the Nile for ca. 3000 years.

THANK YOU