

(U-TH)/HE GEOCHRONOLOGY OF THE LATE PLEISTOCENE DACITES OF THE CSOMÁD (CIOMADUL) VOLCANO (SOUTH-EAST CARPATHIANS)

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Balatonföldvár



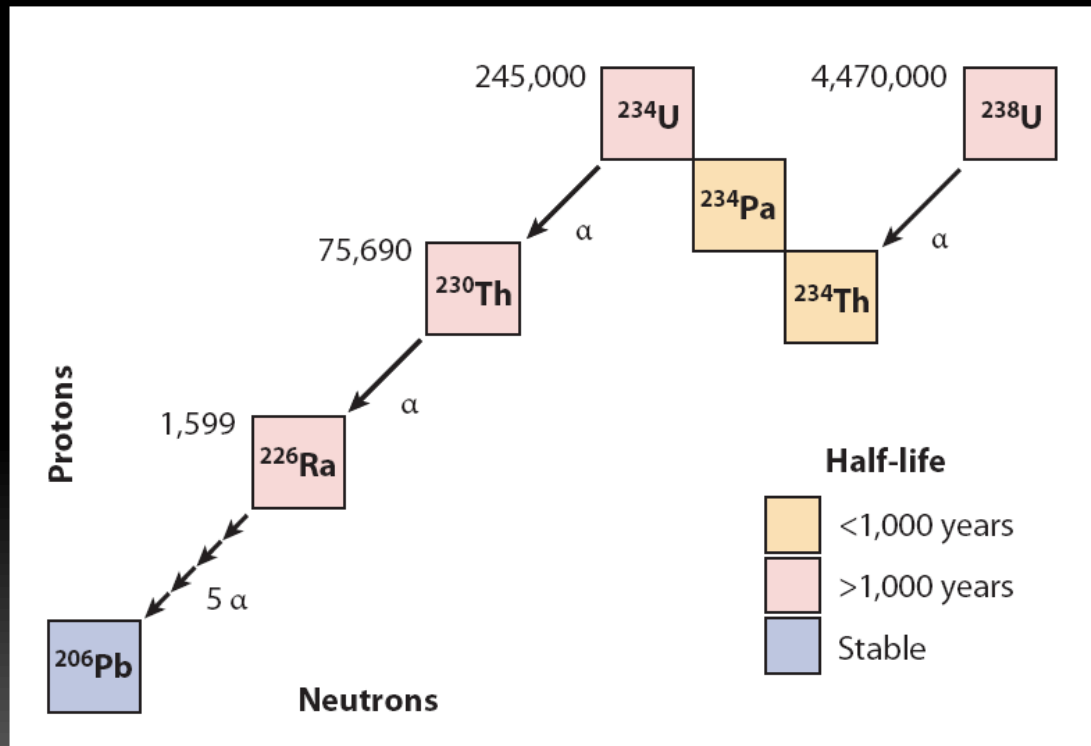
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Outline

- The (U-Th)/He method
- The Csomád volcanic system
- Results
- Conclusions

The (U-Th)/He method

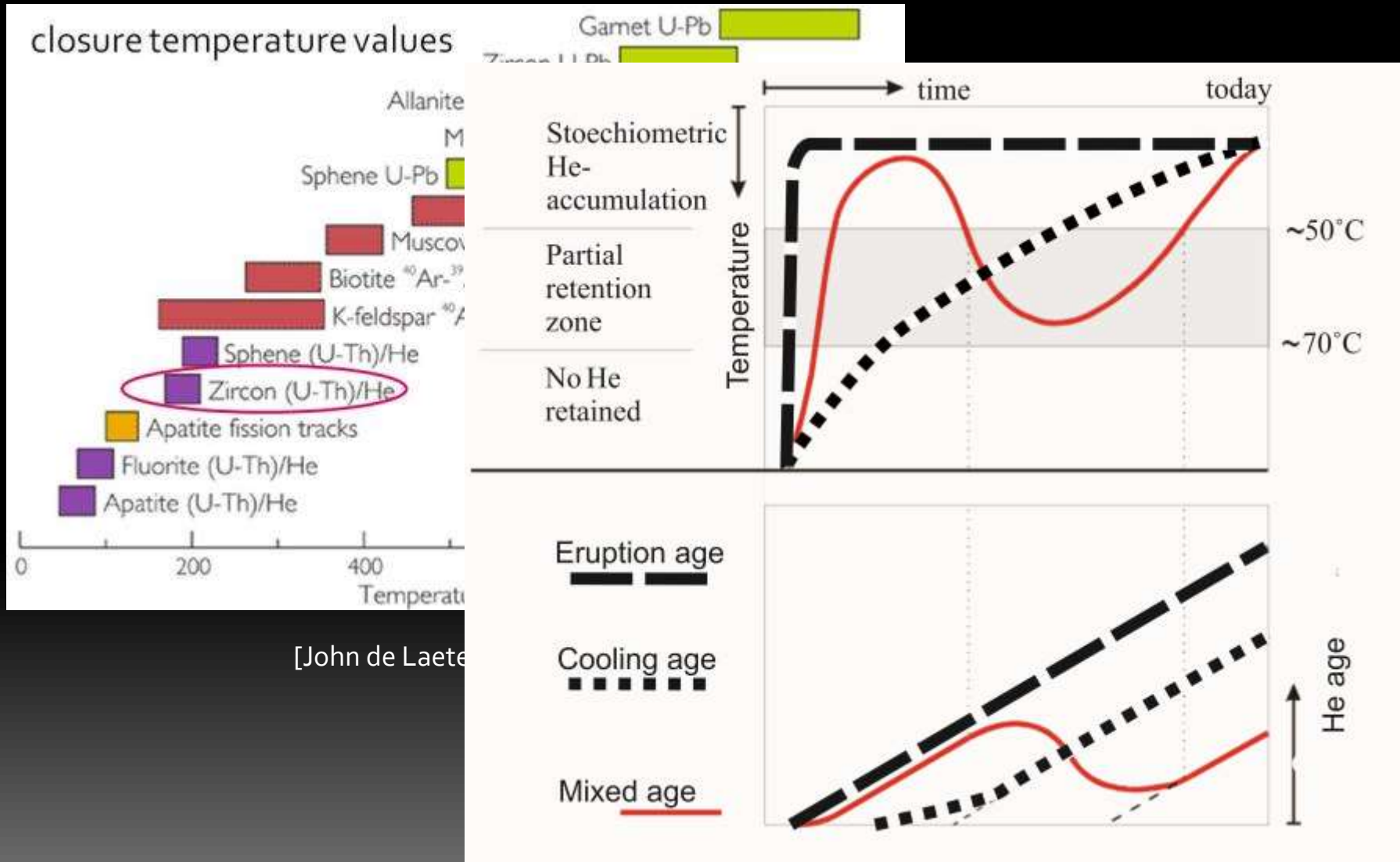
$$4\text{He} = 8^{238}\text{U}_t(e^{\lambda^{238}t} - 1) + 7^{235}\text{U}_t(e^{\lambda^{235}t} - 1) + 6^{232}\text{Th}_t(e^{\lambda^{232}t} - 1)$$



[Schmitt 2011]

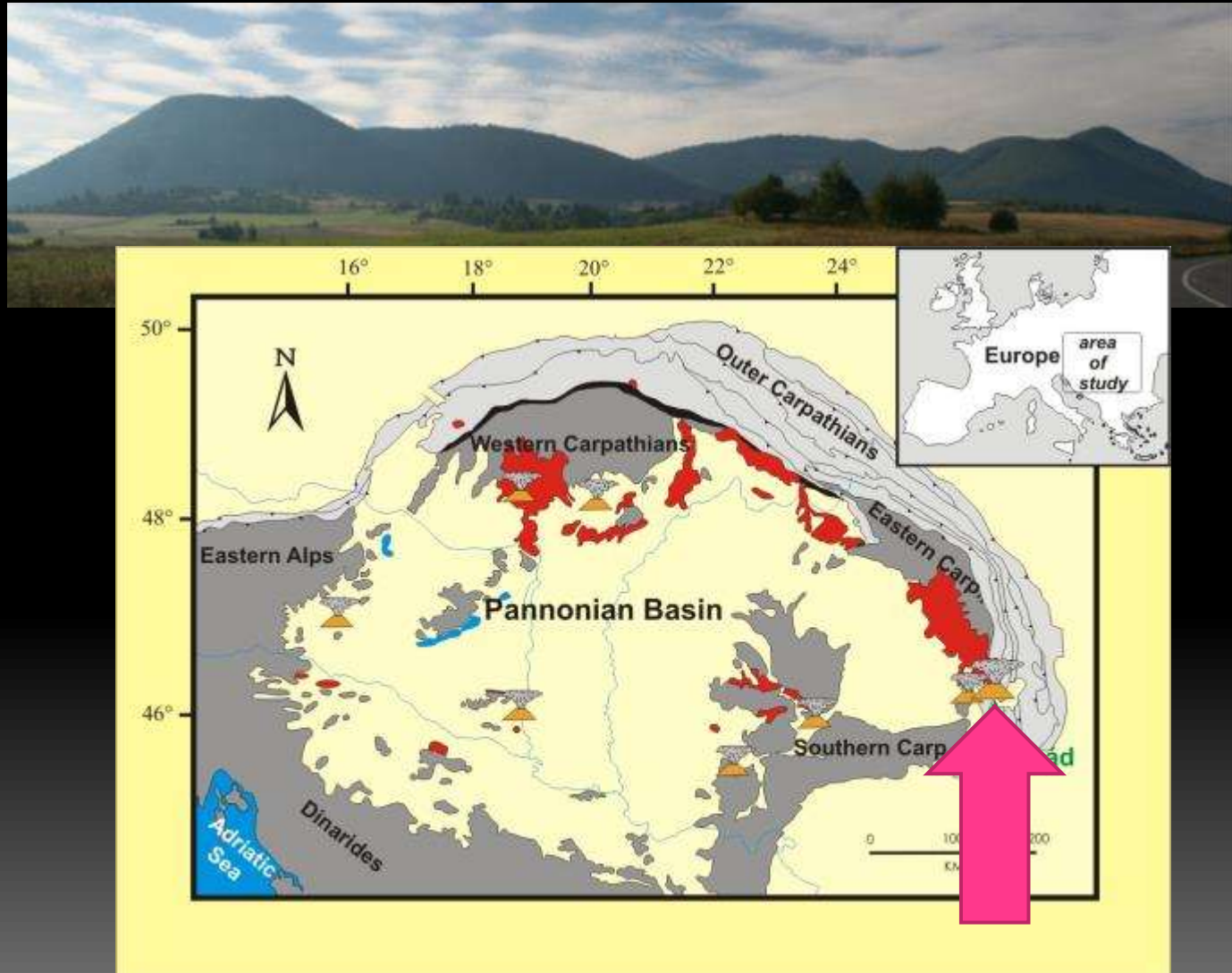
- This equation assumes:
 - zero initial ^4He
 - secular equilibrium – crystal formation is >350 kyr prior to the onset of He accumulation
- Suitable minerals:
 - apatite
 - zircon
 - titanite

The (U-Th)/He method

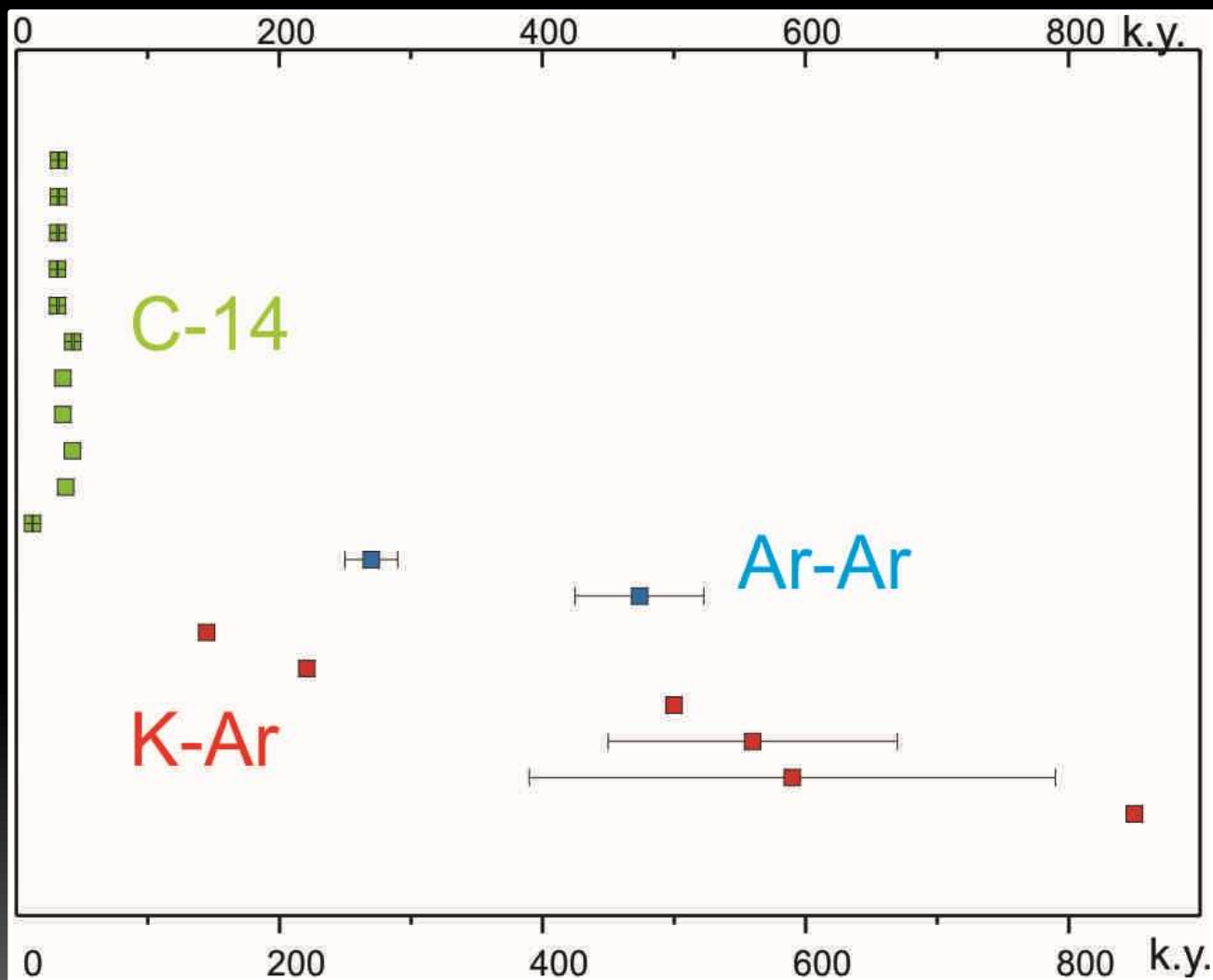


[John de Laeter]

The Csomád volcano

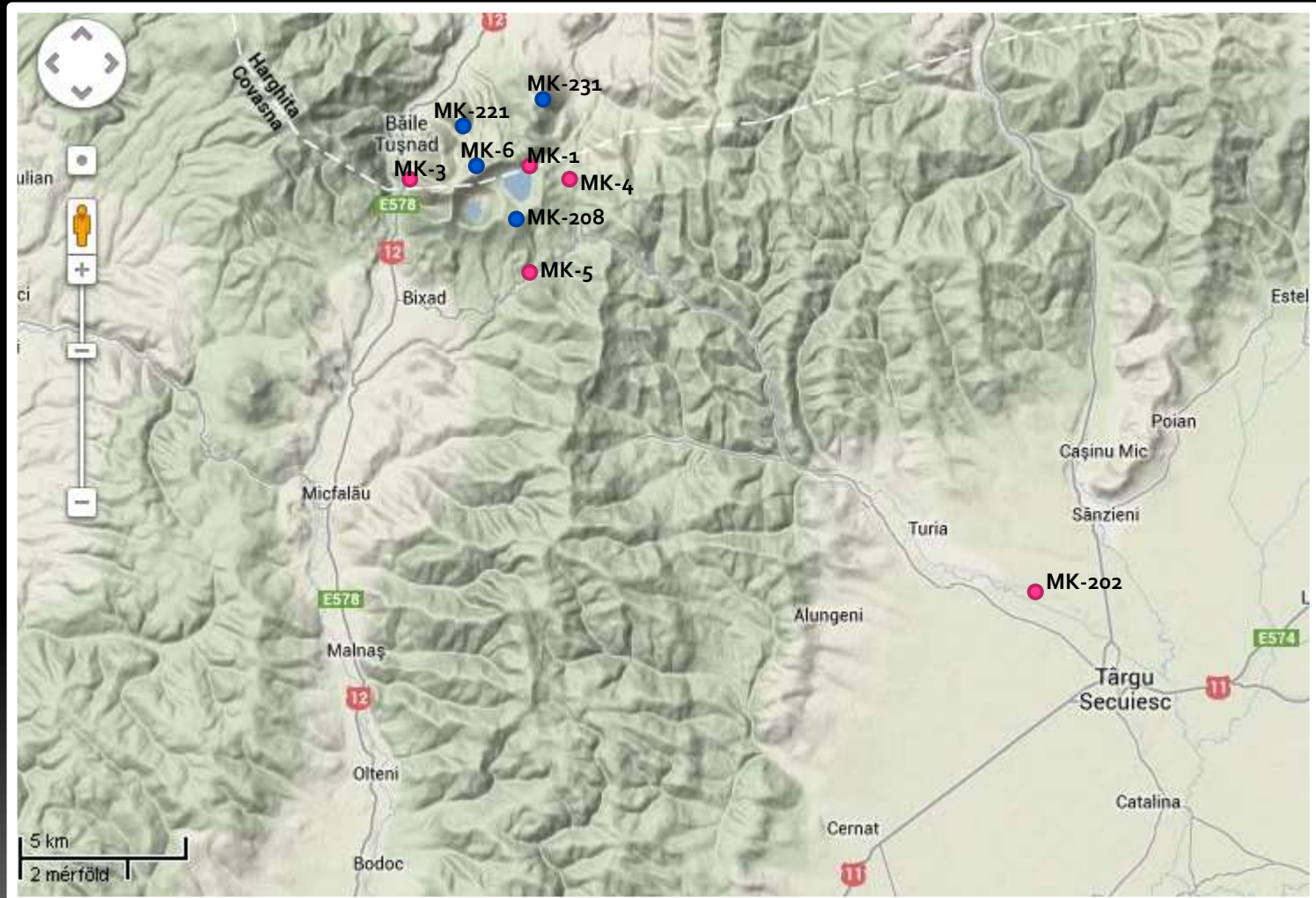


Previous results

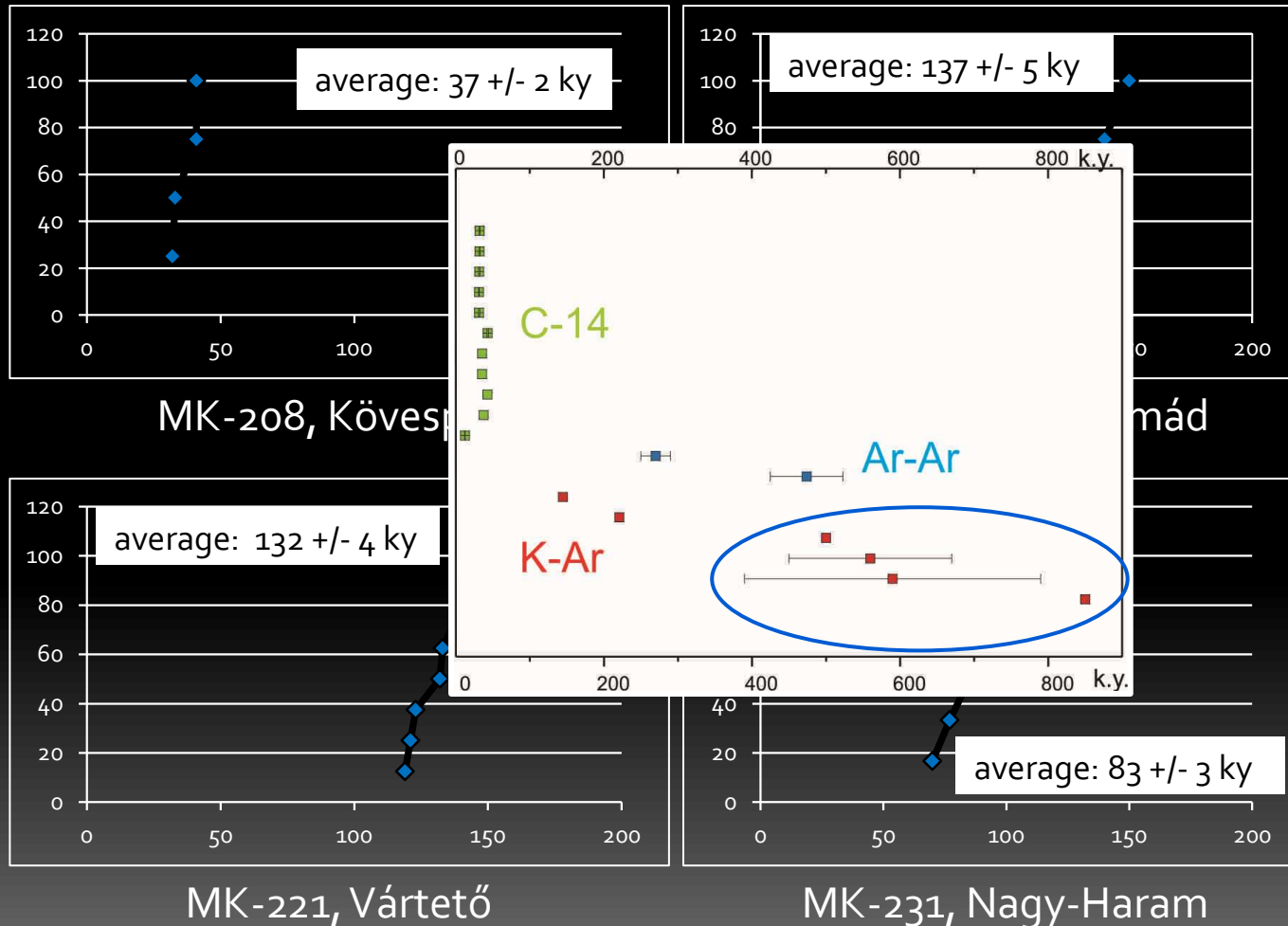


[Pécskay 1995, Moriya 1996,
Karátson 2007, Harangi 2010]

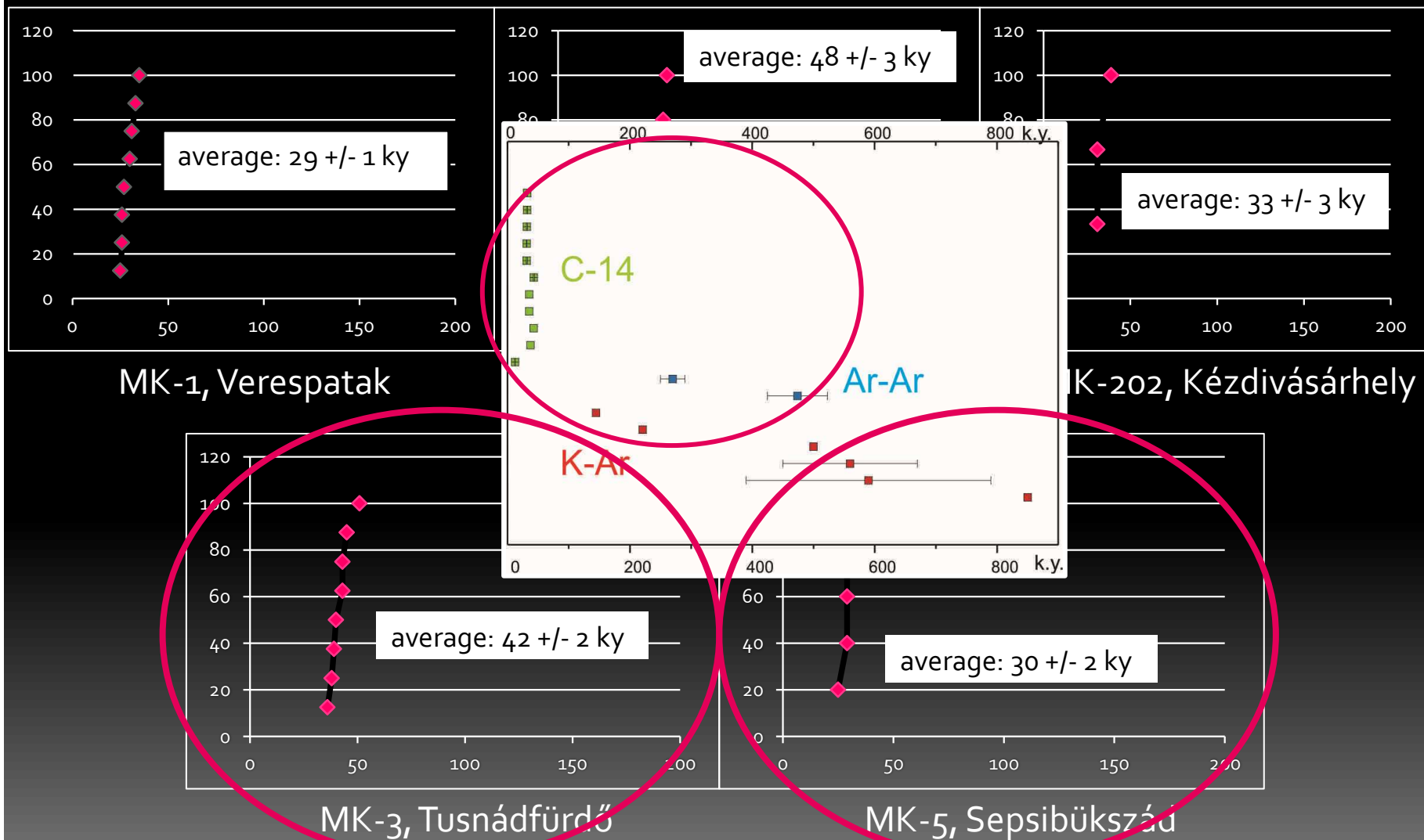
The samples



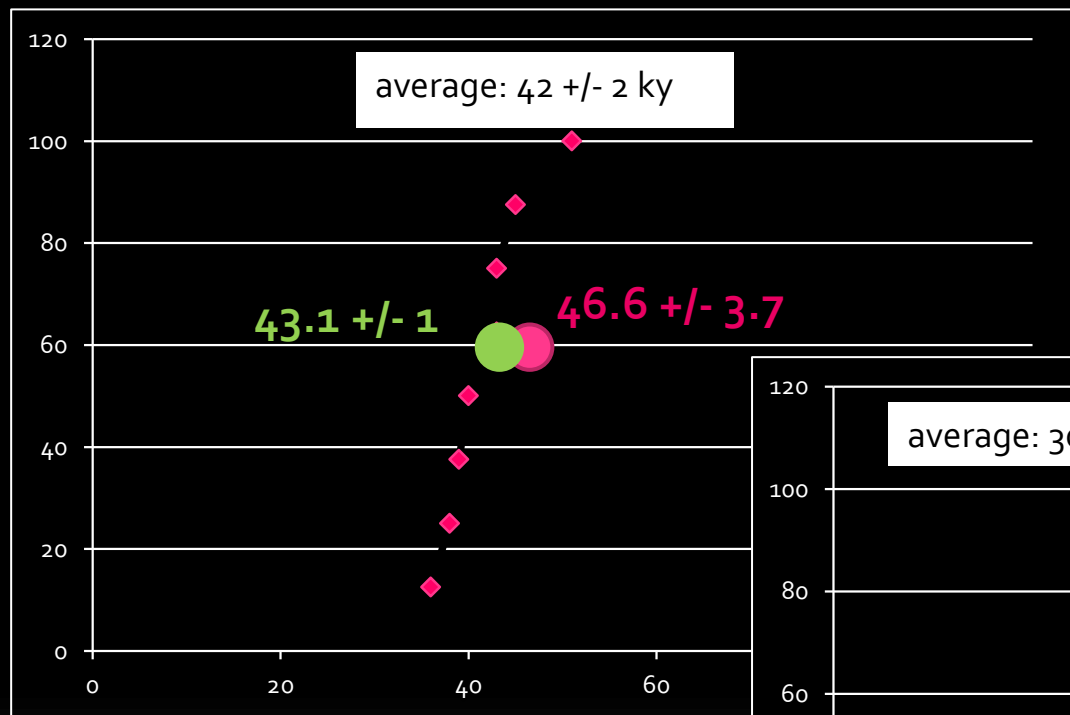
Uncorrected zircon He ages



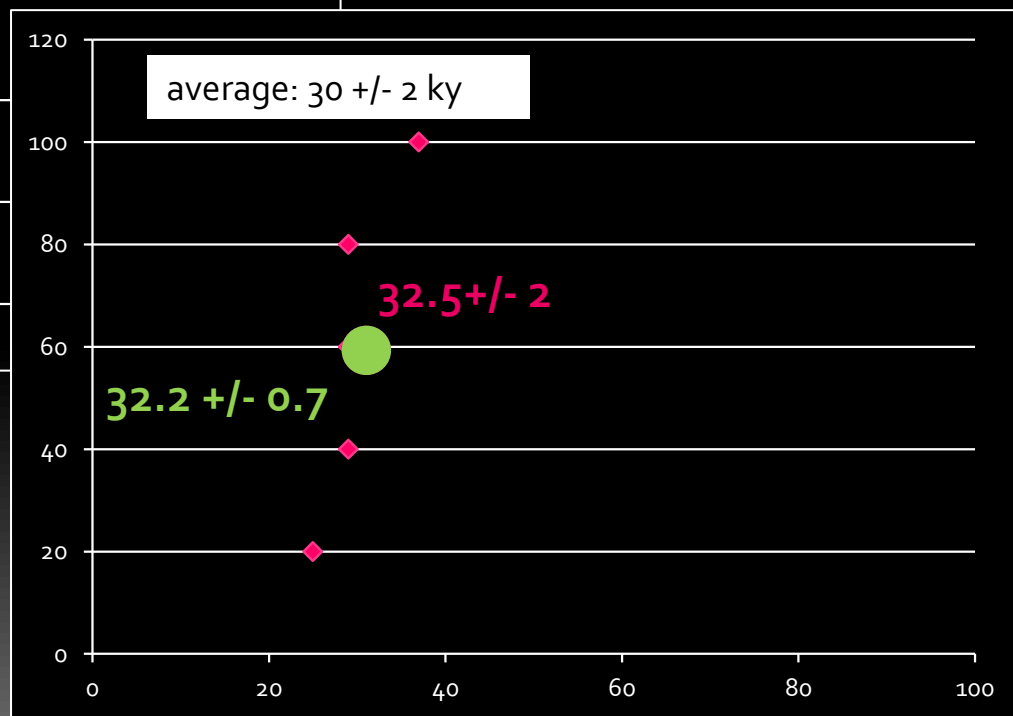
Uncorrected zircon He ages



The U-Th correction



MK-3, Tusnádfürdő



MK-5, Sepsibükszád

Conclusions

- The age of the whole complex is younger than 200 k.y.
- The corrected (U-Th)/He ages fit with the C-14 ages
- There weren't two separate (lava-dome building and explosive) phase



Thank you for your kind attention!

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