Some comments in response to receipt of the Dodson prize

Peter Zeitler, Thermo2016, Maresias, Brazil, 23 September 2016
50 Years of Progress?

"Old School"  "Olden Days"  "Back in the Day"

"Stone Age"  "Right About Now"

Rock was hot... ...now it's not!
Closure Temperature in Cooling Geochronological and Petrological Systems

CITATION RANK

99th PERCENTILE

CITATIONS PER YEAR

~50/year
CLOSURE PROFILES IN COOLING SYSTEMS
M. H. Dodson
Department of Earth Sciences, University of Leeds
Leeds LS2 9JT, England

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[Graph showing closure profiles for different shapes (sphere, cylinder, plane sheet) with temperature plotted against a parameter X and energy change ΔE/RT_c indicated.]
Back to me…

People think I'm worthless, but in fact I'm a subject-matter expert in a very narrow field.
Back to me... one view

People think I'm worthless, but in fact I'm a subject-matter expert in a very narrow field.

It's so narrow that it requires no knowledge whatsoever.

What field is it?

There's no way to know for sure.
Luck
(opportunity, timing, outcomes...)

Awards and
Acomplishment:
a quaternary system

Talent, Creativity,
(naive) Optimism

Preparation

Support
Noye Johnson (1930 – 1987)
Bill Kidd

Program dekoonser

...by PKZ (12 November, 2002)

Yo. This program extracts the coordinates of an isothermal surface
from a sparse 4D data block emitted by one of Koons’ dynamical models.

Peter Koons
MIA-man, Pete Reiners, Rich Ketcham (no picture!)

More recently, the Lehigh crew
COOLING HISTORY OF THE NW HIMALAYA, PAKISTAN

ARGON DIFFUSION IN PARTIALLY OUTGASSED ALKALI FELDSPARS: INSIGHTS FROM $^{40}\text{Ar}/^{39}\text{Ar}$ ANALYSIS

Saddleshaped $^{40}\text{Ar} / ^{39}\text{Ar}$ age spectra from young, microstructurally complex potassium feldspars

U-Th-He dating of apatite: A potential thermochronometer

P. K. Zeitler, A. L. Herczeg, I. McDougall and M. Honda

5.14 Tectonic Aneurysms and Mountain Building

P. Koons, University of Maine, Orono, ME, USA
PK Zeitler, Lehigh University, Bethlehem, PA, USA
B Hallet, University of Washington, Seattle, WA, USA

Erosion, Himalayan Geodynamics, and the Geomorphology of Metamorphism

Crustal reworking at Nanga Parbat, Pakistan: Metamorphic consequences of thermal-mechanical coupling facilitated by erosion

Synchronous anatexis, metamorphism, and rapid denudation at Nanga Parbat (Pakistan Himalaya)
World’s Best Zircon
Nanga Parbat and Namche Barwa

(Naked Mountain and Standing Goddess)
Synoptic Thermochronology of New England

Project Summary

Intellectual Merit

This project is an exploration of comprehensive regional thermochronology as a method of better understanding the thermal history of mountain belts. This novel approach, which we term ‘synoptic thermochronology,’ is highly relevant to the Earthscope program’s mission of

Anticipated Challenges and Critique. We fully expect some challenges and obstacles to arise as just mapping. We are in fact proposing to map the distribution of biotite cooling ages in New

“Earthscope” problems. Which ones can this biotite data set address? It is a fishing expedition in that sense. Past
U-TH/HE DATING OF SHALE, A POTENTIAL THERMOCHRONOMETER

INTEGRATED PROJECT DESCRIPTION

in the correction of grossly young ages (based on the pilot study). There also needs to be more discussion of how (and how many) samples will be analyzed for the U and Th work. The broader impacts of this proposal seem weak, with no discussion of how this work will benefit anyone other than a PhD student and the thermochron field. The proposed research is original and innovative, but its stated goal is likely to be unachievable. Helium thermochronometry has problems with data reliability even under the most controlled conditions (i.e. single grains of well-studied minerals); the chances that comparable success can be attained with so much less control seem slim. The project is fairly cheap, but expensive enough that the secondary products (data collected along the way, training a single student) don't seem to be worth the price tag.
How clean is our laundry:
Can we deliver the quantitative thermal histories that we promise?

Peter Zeitler
Lehigh University
Possible Steps

Community efforts to...

develop kinetic standards

maintain an open kinetic database

streamline analytical techniques (higher n!)

systematize techniques, data handling

update open-source models

coordinate systematic experiments on kinetics (role of imperfections)
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## Diffusing the delegates

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Awards Nominations Process
Bring out yer dead!
Not dead yet !!!