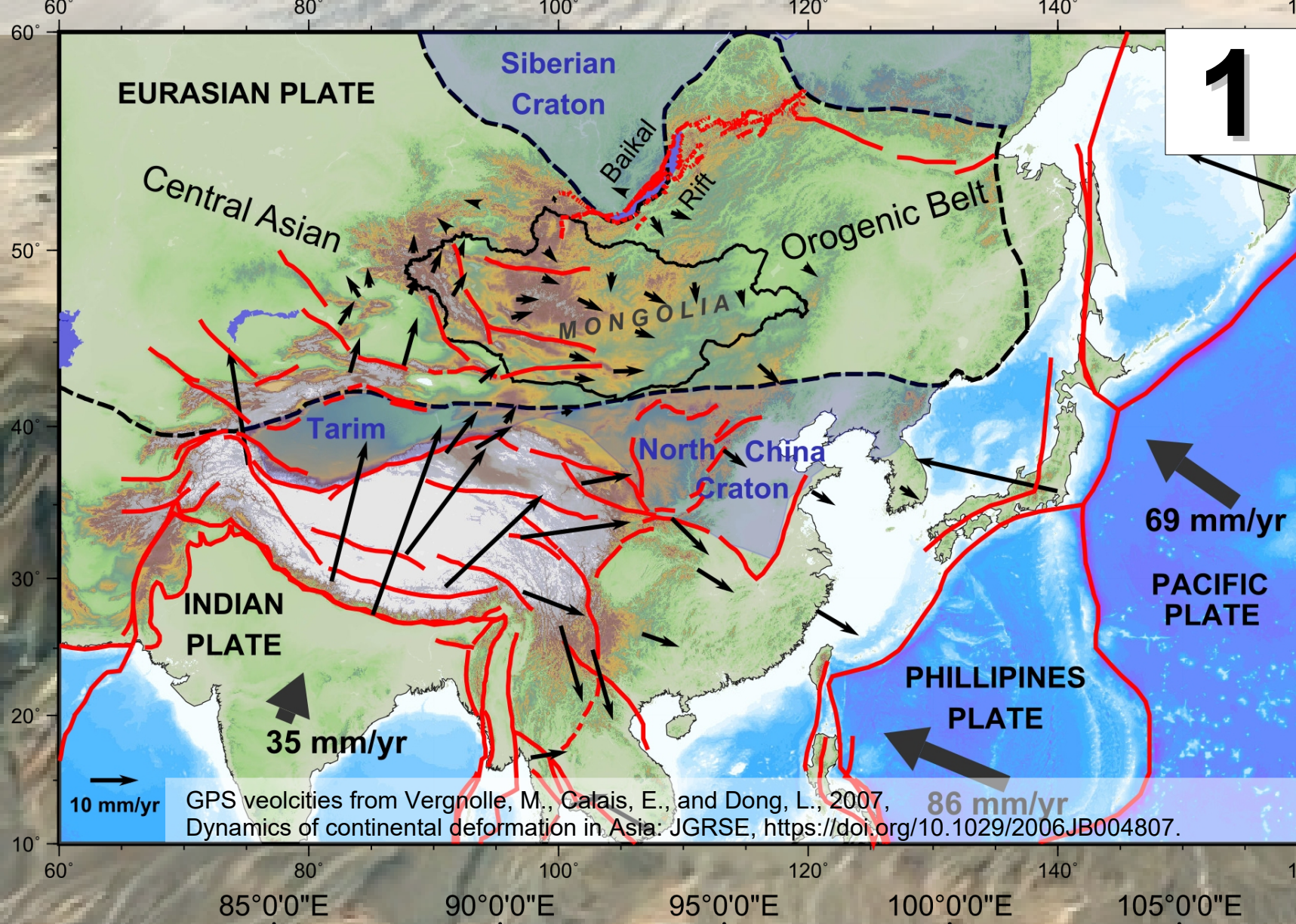


# Synchronous transpressional uplift along widely-spaced intracontinental strike-slip faults, Gobi and Mongolian Altai, central Asia

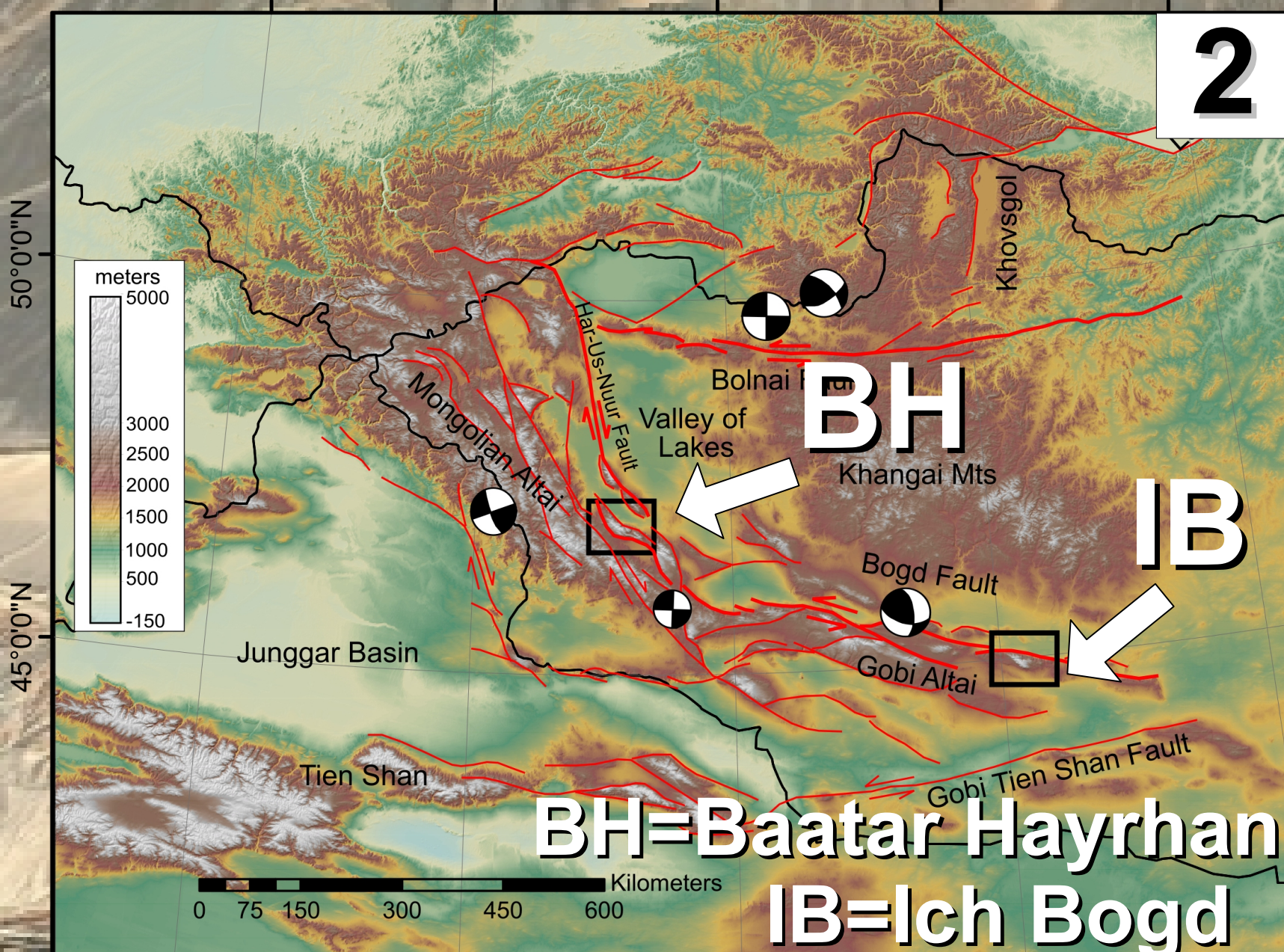
Pazzaglia, F. J.<sup>1</sup>, Gelwick, K.<sup>2</sup>, Ganbold, B.<sup>3</sup>, Guo, H.<sup>1</sup>, Gallen, S.F.<sup>4</sup>, CCL  
Zeitler, P. K.<sup>1</sup>, Meltzer, A. S.<sup>1</sup>, Corbett, L.B.<sup>5</sup>, and Bierman, P.<sup>5</sup>



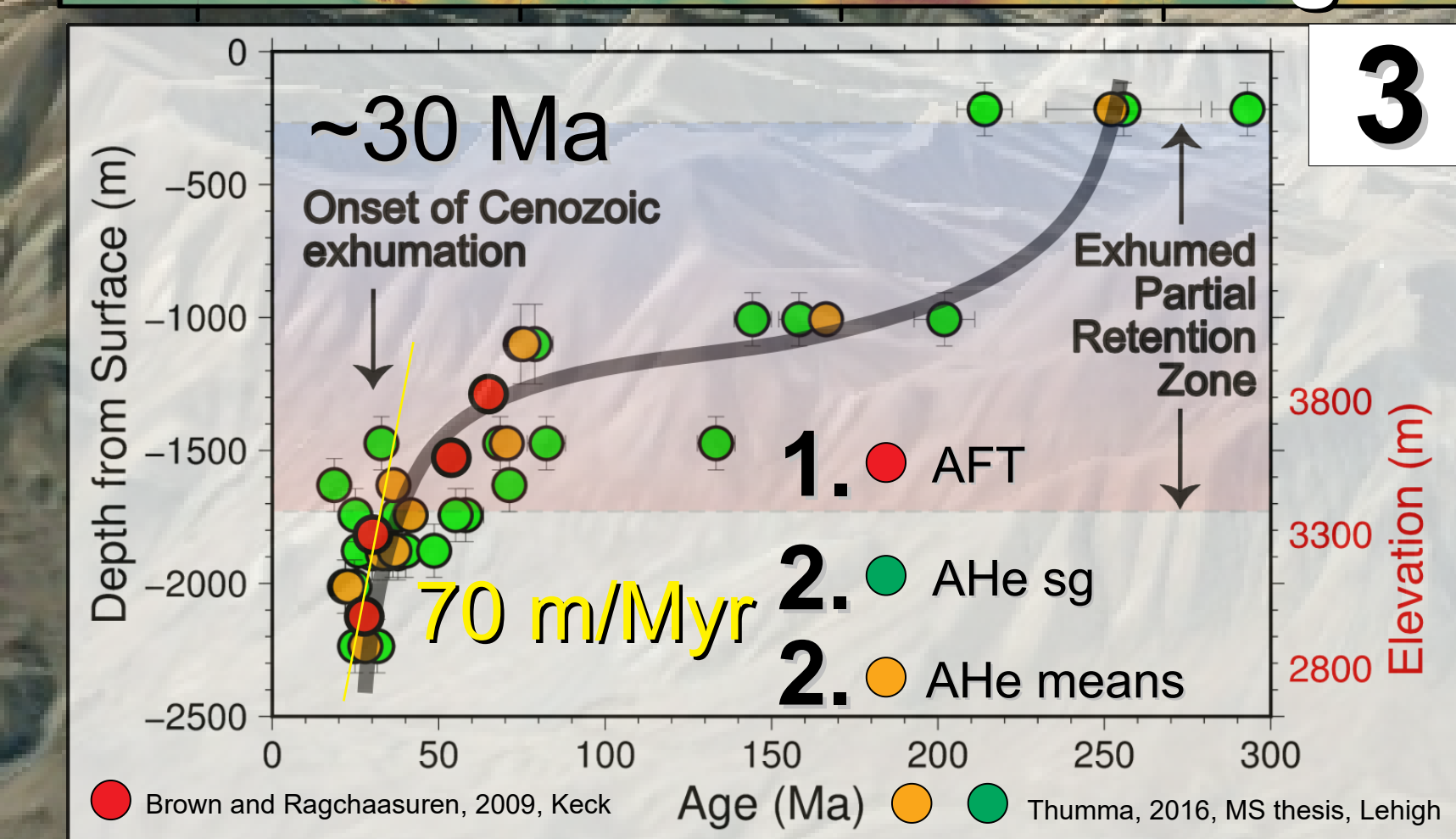
Plate Tectonic Setting



Study Areas



Thermochronology

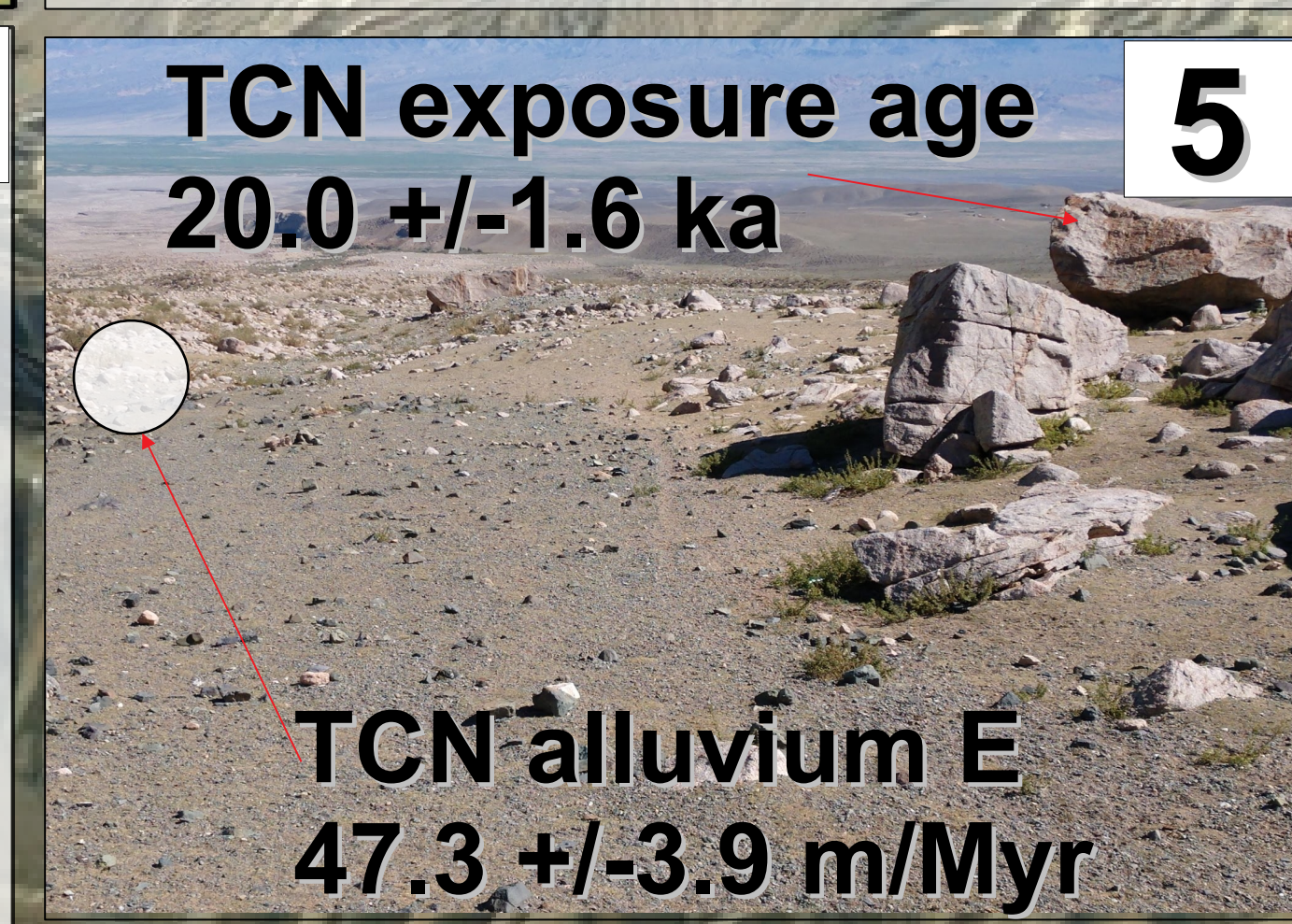


**TCN data**

Sample Name	Quartz Mass (g)	Mass of <sup>9</sup> Be Added (μg)*	AMS Cathode Number	Uncorrected <sup>10</sup> Be/ <sup>9</sup> Be Ratio**	Uncorrected <sup>10</sup> Be/ <sup>9</sup> Be Ratio Uncertainty**
BHM2	21.4287	241.4	153429	5.458E-13	1.019E-14
BHND	22.8143	242.1	153430	6.391E-13	1.256E-14

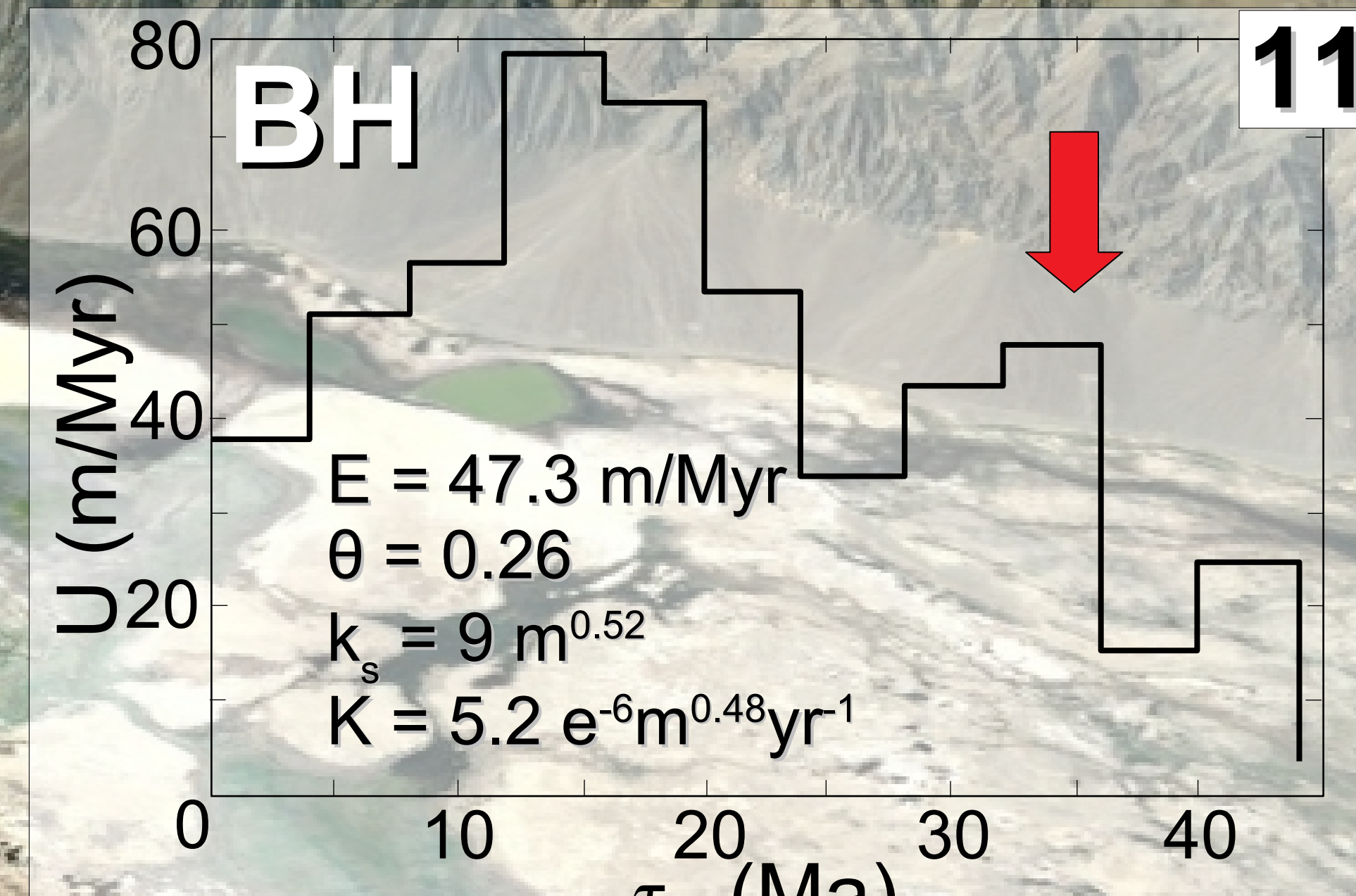
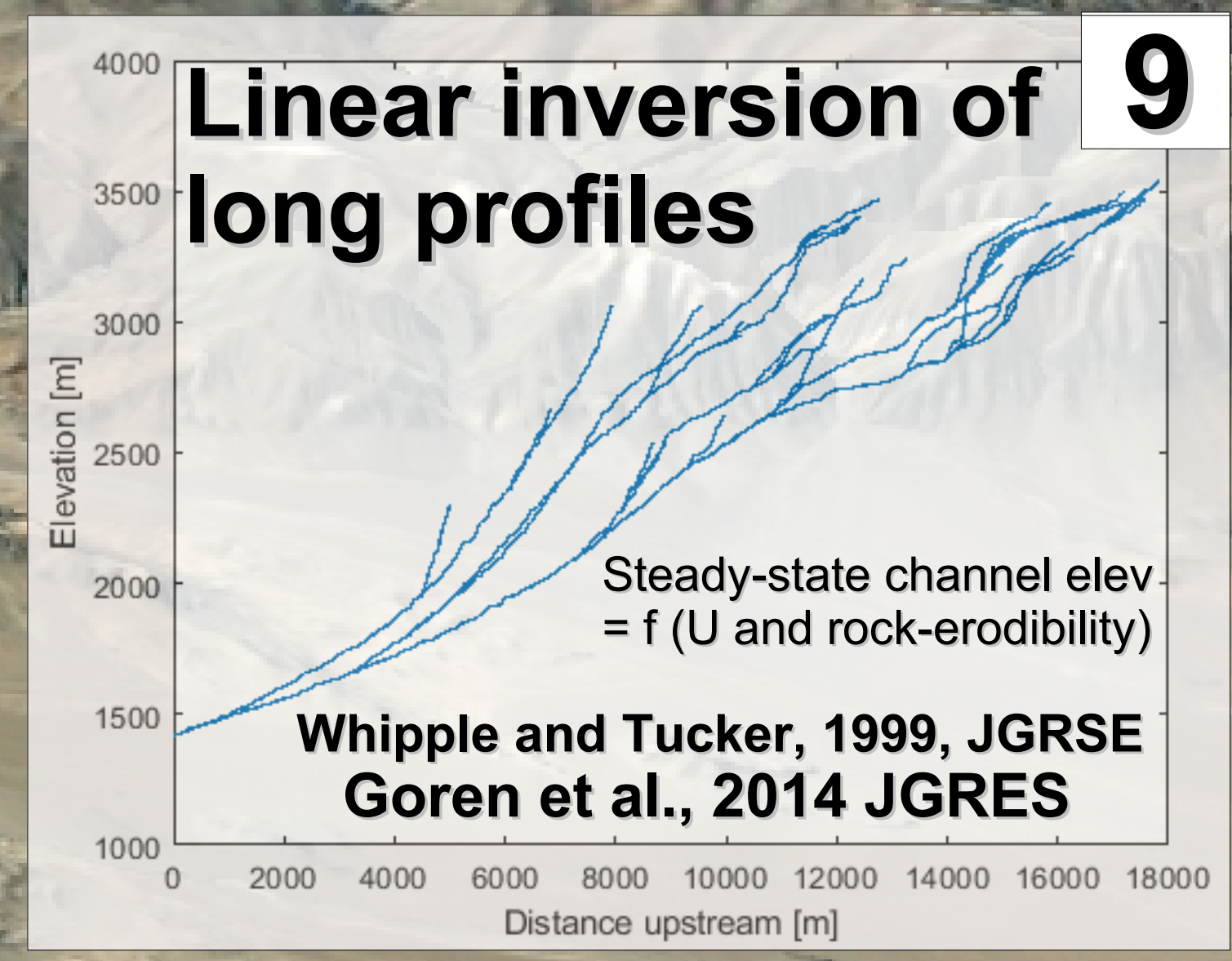
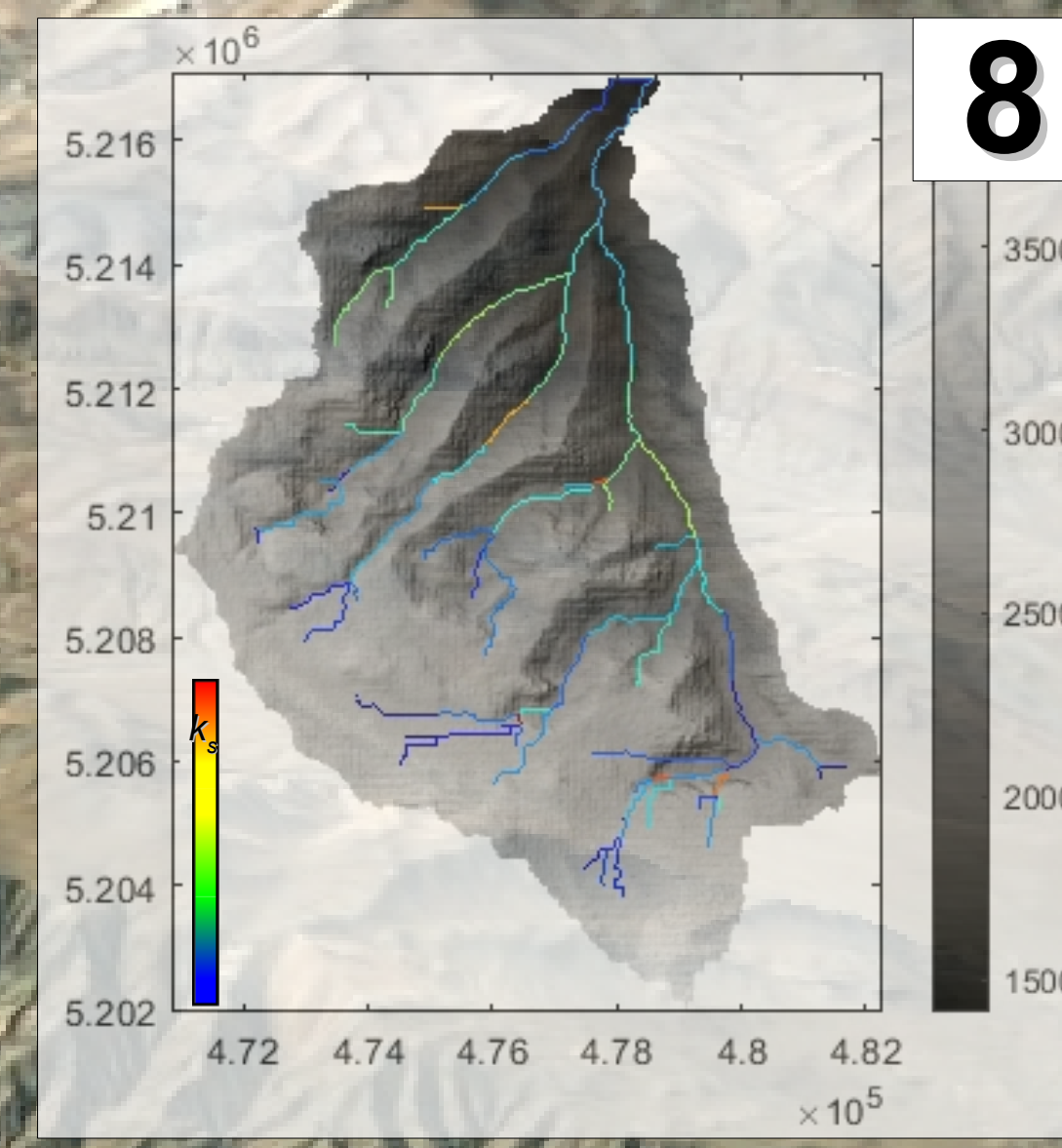
Sample Name	Background-Corrected <sup>10</sup> Be/ <sup>9</sup> Be Ratio	Background-Corrected <sup>10</sup> Be/ <sup>9</sup> Be Ratio Uncertainty	<sup>10</sup> Be Concentration (atoms g <sup>-1</sup> )	<sup>10</sup> Be Concentration Uncertainty (atoms g <sup>-1</sup> )	Erosion rate (m/Myr) or exposure age (yrs)
BHM2	5.448E-13	1.019E-14	4.101E+05	7.672E+03	20,021 +/- 1634
BHND	6.382E-13	1.256E-14	4.526E+05	8.906E+03	47.3 +/- 3.87



**Conclusions**

Long profile linear inversion using new TCN E data, on catchments with uniform rock type finds that

- Block uplifts separated by ~700 km have similar rock uplift histories that match geology and thermochron.
- Uplift (because of fault slip) commenced ~30 Ma, accelerated to ~70-80 m/Myr and is currently waning to ~40 m/Myr



**10**

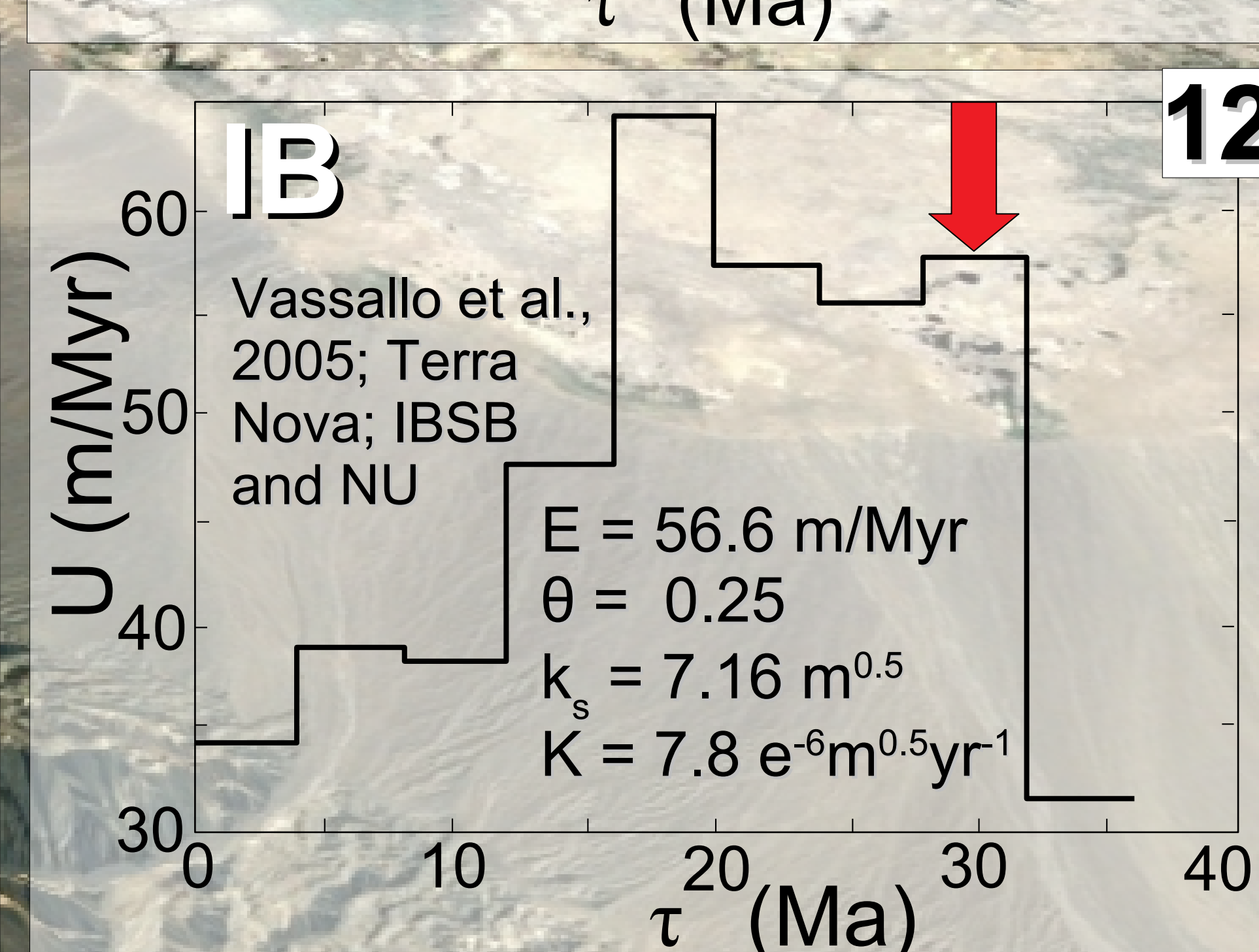
$$E = KA^m S^n \quad (1)$$

$$S = k_s A^{-\theta} \quad (2)$$

$$k_s = (U/K)^{1/n}; n=1 \quad (3)$$

$$\tau = \int_{x_0}^x \frac{dx}{K(x')A(x')^m} \quad (4)$$

$$t^* = K A_0^m t \quad U^* = \frac{U}{K A_0^m} \quad (5)$$



**6**

$$z(0, x) = \int_0^x U(t') dt' \quad (6)$$

**7**

$$A^* U^* = z \quad (7)$$

N x q matrix, where q is number of time intervals

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