

Supplementary material:

Palaeoglaciology of Bayan Har Shan, NE Tibetan Plateau: exposure ages reveal a missing LGM expansion

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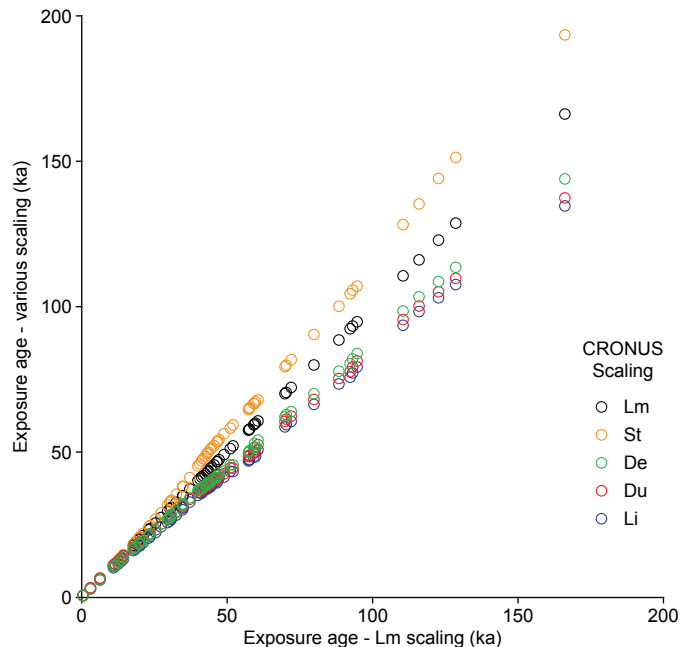
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Content:

1. Supplementary Figure 1: CRONUS exposure ages using various production rate scaling schemes.
2. Photos of samples/sampling sites and exposure ages



Supplementary Figure 1. Apparent exposure ages (see Supplementary dataset) using the five different production rate scaling schemes from the CRONUS calculator.

Photos of samples/sample sites

Location Anyemaqen



CRONUS exp ages

St: 0.47 ± 0.06 ka
 De: 0.56 ± 0.09 ka
 Du: 0.57 ± 0.09 ka
 Li: 0.56 ± 0.08 ka
 Lm: 0.54 ± 0.07 ka

Location A



CRONUS exp ages

St: 50.8 ± 4.5 ka
 De: 39.5 ± 4.7 ka

Du: 38.8 ± 4.6 ka

Li: 37.9 ± 3.8 ka

Lm: 44.3 ± 3.8 ka



CRONUS exp ages

St: 6.3 ± 0.7 ka
 De: 6.0 ± 0.8 ka

Du: 6.6 ± 0.9 ka

Li: 5.9 ± 0.7 ka

Lm: 6.4 ± 0.6 ka



CRONUS exp ages

St: 2.9 ± 0.4 ka
 De: 2.9 ± 0.5 ka

Du: 3.2 ± 0.5 ka

Li: 2.9 ± 0.4 ka

Lm: 3.1 ± 0.4 ka

Location B



CRONUS exp ages

St: 32.7 ± 3.0 ka
 De: 27.3 ± 3.3 ka

Du: 27.1 ± 3.3 ka

Li: 26.2 ± 2.7 ka

Lm: 30.4 ± 2.7 ka

Location C



<u>CRONUS exp ages</u>	Du: 38.4 ± 4.6 ka
St: 49.9 ± 4.5 ka	Li: 37.5 ± 3.8 ka
De: 39.1 ± 4.7 ka	Lm: 43.6 ± 3.8 ka



<u>CRONUS exp ages</u>	Du: 18.7 ± 2.3 ka
St: 20.7 ± 2.0 ka	Li: 17.7 ± 1.9 ka
De: 18.4 ± 2.3 ka	Lm: 20.1 ± 1.9 ka



<u>CRONUS exp ages</u>	Du: 19.7 ± 2.4 ka
St: 22.0 ± 2.1 ka	Li: 18.7 ± 1.9 ka
De: 19.4 ± 2.4 ka	Lm: 21.2 ± 1.9 ka



<u>CRONUS exp ages</u>	Du: 26.7 ± 3.3 ka
St: 31.7 ± 3.1 ka	Li: 25.7 ± 2.8 ka
De: 26.8 ± 3.4 ka	Lm: 29.6 ± 2.8 ka



C-old

<u>CRONUS exp ages</u>	Du: 36.6 ± 4.3 ka
St: 46.9 ± 4.1 ka	Li: 35.3 ± 3.6 ka
De: 37.3 ± 4.4 ka	Lm: 41.3 ± 3.5 ka

C-surface

<u>CRONUS exp ages</u>	Du: 27.8 ± 3.3 ka
St: 33.3 ± 2.9 ka	Li: 26.8 ± 2.7 ka
De: 28.0 ± 3.3 ka	Lm: 30.9 ± 2.6 ka

C-young

<u>CRONUS exp ages</u>	Du: 21.4 ± 2.5 ka
St: 24.3 ± 2.1 ka	Li: 20.4 ± 2.0 ka
De: 21.2 ± 2.5 ka	Lm: 23.2 ± 2.0 ka

Location D



<u>CRONUS exp ages</u>	Du: 44.4 ± 5.3 ka
St: 59.2 ± 5.3 ka	Li: 43.2 ± 4.3 ka
De: 45.5 ± 5.4 ka	Lm: 52.1 ± 4.5 ka



<u>CRONUS exp ages</u>	Du: 39.5 ± 4.7 ka
St: 51.2 ± 4.6 ka	Li: 38.5 ± 3.9 ka
De: 40.2 ± 4.8 ka	Lm: 44.8 ± 3.9 ka



<u>CRONUS exp ages</u>	Du: 40.9 ± 4.9 ka
St: 53.6 ± 4.8 ka	Li: 39.9 ± 4.0 ka
De: 41.7 ± 5.0 ka	Lm: 46.8 ± 4.0 ka



<u>CRONUS exp ages</u>	Du: 12.3 ± 1.5 ka
St: 12.6 ± 1.1 ka	Li: 11.4 ± 1.1 ka
De: 11.8 ± 1.4 ka	Lm: 12.6 ± 1.1 ka

Location E



CRONUS exp ages

St: 38.0 ± 3.7 ka
 De: 31.4 ± 4.0 ka
 Du: 31.1 ± 3.9 ka
 Li: 30.1 ± 3.3 ka
 Lm: 34.7 ± 3.3 ka



CRONUS exp ages

St: 18.3 ± 1.7 ka
 De: 16.6 ± 2.1 ka
 Du: 17.0 ± 2.1 ka
 Li: 16.0 ± 1.7 ka
 Lm: 17.9 ± 1.6 ka



CRONUS exp ages

St: 79.2 ± 7.7 ka
 De: 62.0 ± 7.8 ka
 Du: 60.5 ± 7.6 ka
 Li: 58.5 ± 6.3 ka
 Lm: 69.9 ± 6.6 ka

Location F



TB-05-048

<u>CRONUS exp ages</u>	Du: 13.2 ± 1.7 ka
St: 13.6 ± 1.4 ka	Li: 12.3 ± 1.4 ka
De: 12.7 ± 1.7 ka	Lm: 13.6 ± 1.4 ka



TB-05-049

<u>CRONUS exp ages</u>	Du: 11.4 ± 1.4 ka
St: 11.5 ± 1.1 ka	Li: 10.5 ± 1.1 ka
De: 10.9 ± 1.3 ka	Lm: 11.5 ± 1.0 ka



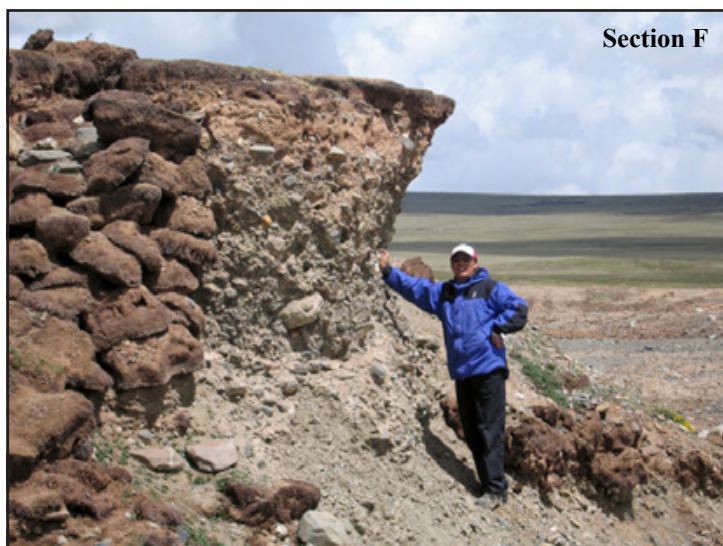
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<u>CRONUS exp ages</u>	Du: 17.4 ± 2.2 ka
St: 19.0 ± 1.8 ka	Li: 16.5 ± 1.8 ka
De: 17.1 ± 2.1 ka	Lm: 18.5 ± 1.7 ka



TB-07-29

<u>CRONUS exp ages</u>	Du: 49.8 ± 6.0 ka
St: 66.7 ± 6.1 ka	Li: 48.2 ± 4.9 ka
De: 51.4 ± 6.3 ka	Lm: 59.2 ± 5.3 ka



Section F

F-old

<u>CRONUS exp ages</u>	Du: 105.0 ± 12.7 ka
St: 144.0 ± 13.0 ka	Li: 102.9 ± 10.4 ka
De: 108.5 ± 13.2 ka	Lm: 122.8 ± 10.7 ka

F-surface

<u>CRONUS exp ages</u>	Du: 79.2 ± 9.5 ka
St: 105.6 ± 9.4 ka	Li: 77.1 ± 7.8 ka
De: 81.9 ± 9.9 ka	Lm: 93.2 ± 8.0 ka

F-young

<u>CRONUS exp ages</u>	Du: 62.2 ± 7.4 ka
St: 81.7 ± 7.2 ka	Li: 60.4 ± 6.0 ka
De: 63.8 ± 7.6 ka	Lm: 72.1 ± 6.2 ka

Location G



CRONUS exp ages

St: 47.6 ± 4.3 ka
De: 37.9 ± 4.6 ka
Du: 37.2 ± 4.5 ka
Li: 36.3 ± 3.7 ka
Lm: 41.8 ± 3.7 ka



CRONUS exp ages

St: 56.2 ± 5.1 ka
De: 43.3 ± 5.3 ka
Du: 42.4 ± 5.1 ka
Li: 41.3 ± 4.2 ka
Lm: 49.0 ± 4.4 ka



CRONUS exp ages

St: 90.3 ± 8.4 ka
De: 70.0 ± 8.6 ka
Du: 68.0 ± 8.3 ka
Li: 66.3 ± 6.9 ka
Lm: 79.9 ± 7.2 ka

Location H



CRONUS exp ages
 St: 64.5 ± 6.4 ka
 De: 49.8 ± 6.4 ka

Du: 48.3 ± 6.2 ka
 Li: 46.9 ± 5.2 ka
 Lm: 57.4 ± 5.6 ka



CRONUS exp ages
 St: 24.7 ± 2.5 ka
 De: 21.7 ± 2.8 ka

Du: 21.8 ± 2.8 ka
 Li: 20.9 ± 2.3 ka
 Lm: 23.6 ± 2.3 ka



CRONUS exp ages
 St: 64.8 ± 6.8 ka
 De: 50.1 ± 6.6 ka

Du: 48.6 ± 6.4 ka
 Li: 47.1 ± 5.4 ka
 Lm: 57.7 ± 5.9 ka



CRONUS exp ages
 St: 48.3 ± 4.3 ka
 De: 38.5 ± 4.6 ka

Du: 37.8 ± 4.5 ka
 Li: 36.9 ± 3.7 ka
 Lm: 42.5 ± 3.7 ka

Location I



CRONUS exp ages
 St: 53.4 ± 4.9 ka
 De: 41.2 ± 5.0 ka

Du: 40.3 ± 4.9 ka
 Li: 39.4 ± 4.0 ka
 Lm: 46.5 ± 4.1 ka



CRONUS exp ages
 St: 104.3 ± 9.6 ka
 De: 80.3 ± 9.8 ka

Du: 77.5 ± 9.5 ka
 Li: 75.6 ± 7.8 ka
 Lm: 92.3 ± 8.3 ka

Location J



TB-07-38

<u>CRONUS exp ages</u>	Du: 14.1 ± 1.7 ka
St: 14.6 ± 1.4 ka	Li: 13.1 ± 1.4 ka
De: 13.6 ± 1.7 ka	Lm: 14.4 ± 1.3 ka



TB-07-39

<u>CRONUS exp ages</u>	Du: 95.5 ± 11.7 ka
St: 128.1 ± 11.9 ka	Li: 93.6 ± 9.7 ka
De: 98.4 ± 12.1 ka	Lm: 110.5 ± 9.9 ka



TB-07-40

<u>CRONUS exp ages</u>	Du: 109.7 ± 13.5 ka
St: 151.2 ± 14.1 ka	Li: 107.5 ± 11.2 ka
De: 113.5 ± 14.0 ka	Lm: 128.7 ± 11.6 ka



TB-07-41

<u>CRONUS exp ages</u>	Du: 75.2 ± 9.1 ka
St: 100.0 ± 9.1 ka	Li: 73.3 ± 7.5 ka
De: 77.7 ± 9.4 ka	Lm: 88.5 ± 7.8 ka



Section J



J-old

<u>CRONUS exp ages</u>	Du: 137.4 ± 16.7 ka
St: 193.4 ± 17.6 ka	Li: 134.6 ± 13.7 ka
De: 143.8 ± 17.6 ka	Lm: 166.2 ± 14.6 ka

J-surface

<u>CRONUS exp ages</u>	Du: 100.2 ± 12.1 ka
St: 135.3 ± 12.2 ka	Li: 98.2 ± 9.9 ka
De: 103.3 ± 12.5 ka	Lm: 116.0 ± 10.1 ka

J-young

<u>CRONUS exp ages</u>	Du: 61.2 ± 7.3 ka
St: 79.8 ± 7.1 ka	Li: 59.3 ± 5.9 ka
De: 62.7 ± 7.5 ka	Lm: 70.4 ± 6.0 ka

Location K



CRONUS exp ages
 St: 35.4 ± 3.2 ka
 De: 29.4 ± 3.5 ka

Du: 29.1 ± 3.5 ka
 Li: 28.2 ± 2.8 ka
 Lm: 32.6 ± 2.8 ka



CRONUS exp ages
 St: 26.8 ± 2.4 ka
 De: 23.2 ± 2.8 ka

Du: 23.2 ± 2.8 ka
 Li: 22.3 ± 2.2 ka
 Lm: 25.5 ± 2.2 ka



CRONUS exp ages
 St: 67.2 ± 6.0 ka
 De: 51.6 ± 6.2 ka

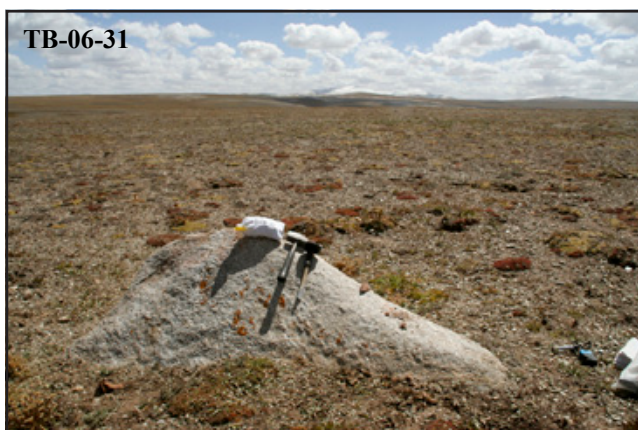
Du: 49.9 ± 6.0 ka
 Li: 48.3 ± 4.9 ka
 Lm: 59.8 ± 5.2 ka



CRONUS exp ages
 St: 49.3 ± 4.4 ka
 De: 38.8 ± 4.6 ka

Du: 38.1 ± 4.5 ka
 Li: 37.2 ± 3.7 ka
 Lm: 43.1 ± 3.7 ka

Location L



CRONUS exp ages

St: 52.1 ± 4.7 ka

De: 41.0 ± 4.9 ka

Du: 40.3 ± 4.8 ka

Li: 39.3 ± 4.0 ka

Lm: 45.5 ± 4.0 ka



CRONUS exp ages

St: 107.0 ± 10.2 ka

De: 83.9 ± 10.4 ka

Du: 81.2 ± 10.1 ka

Li: 79.2 ± 8.4 ka

Lm: 94.7 ± 8.7 ka



CRONUS exp ages

St: 20.3 ± 2.0 ka

De: 18.3 ± 2.3 ka

Du: 18.6 ± 2.3 ka

Li: 17.6 ± 1.9 ka

Lm: 19.8 ± 1.9 ka

Location M



<u>CRONUS exp ages</u>	Du: 38.7 ± 4.6 ka
St: 49.7 ± 4.5 ka	Li: 37.7 ± 3.8 ka
De: 39.4 ± 4.8 ka	Lm: 43.4 ± 3.8 ka



<u>CRONUS exp ages</u>	Du: 48.9 ± 5.9 ka
St: 65.1 ± 5.9 ka	Li: 47.3 ± 4.8 ka
De: 50.4 ± 6.1 ka	Lm: 57.8 ± 5.0 ka



<u>CRONUS exp ages</u>	Du: 36.0 ± 4.3 ka
St: 45.2 ± 4.1 ka	Li: 35.1 ± 3.5 ka
De: 36.6 ± 4.4 ka	Lm: 40.0 ± 3.5 ka



<u>CRONUS exp ages</u>	Du: 11.0 ± 1.4 ka
St: 11.0 ± 1.1 ka	Li: 10.2 ± 1.1 ka
De: 10.5 ± 1.3 ka	Lm: 11.0 ± 1.1 ka

Location N



CRONUS exp ages
 St: 45.9 ± 4.1 ka
 De: 37.3 ± 4.5 ka
 Du: 36.8 ± 4.4 ka
 Li: 35.9 ± 3.6 ka
 Lm: 40.7 ± 3.5 ka



CRONUS exp ages
 St: 58.2 ± 5.6 ka
 De: 45.5 ± 5.7 ka
 Du: 44.5 ± 5.5 ka
 Li: 43.3 ± 4.6 ka
 Lm: 51.1 ± 4.8 ka



CRONUS exp ages
 St: 38.2 ± 3.8 ka
 De: 32.0 ± 4.1 ka
 Du: 31.6 ± 4.0 ka
 Li: 30.7 ± 3.4 ka
 Lm: 35.0 ± 3.4 ka



Section N

N-old

CRONUS exp ages
 St: 41.1 ± 3.6 ka
 De: 34.1 ± 4.1 ka
 Du: 33.7 ± 4.0 ka
 Li: 32.7 ± 3.3 ka
 Lm: 37.2 ± 3.2 ka

N-surface

CRONUS exp ages
 St: 29.0 ± 2.5 ka
 De: 25.2 ± 3.0 ka
 Du: 25.2 ± 3.0 ka
 Li: 24.2 ± 2.4 ka
 Lm: 27.4 ± 2.3 ka

N-young

CRONUS exp ages
 St: 20.5 ± 1.8 ka
 De: 18.5 ± 2.2 ka
 Du: 18.8 ± 2.2 ka
 Li: 17.9 ± 1.8 ka
 Lm: 19.9 ± 1.7 ka

Location O



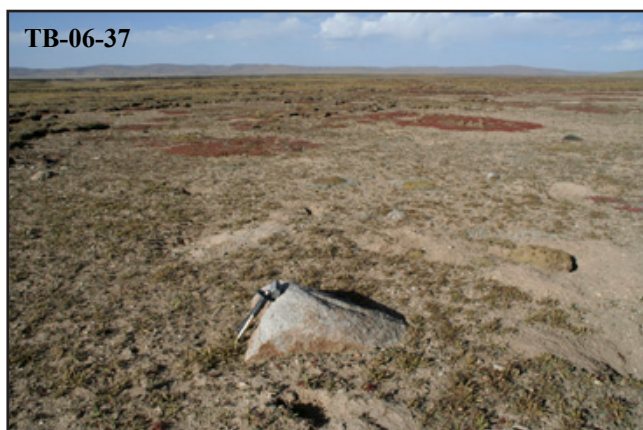
TB-06-01

<u>CRONUS exp ages</u>	Du: 42.1 ± 5.2 ka
St: 54.1 ± 5.1 ka	Li: 41.0 ± 4.3 ka
De: 42.8 ± 5.3 ka	Lm: 47.3 ± 4.4 ka



TB-06-02

<u>CRONUS exp ages</u>	Du: 52.5 ± 6.4 ka
St: 67.9 ± 6.2 ka	Li: 50.7 ± 5.2 ka
De: 54.0 ± 6.6 ka	Lm: 60.7 ± 5.4 ka



TB-06-37

<u>CRONUS exp ages</u>	Du: 31.6 ± 4.0 ka
St: 37.9 ± 3.7 ka	Li: 30.7 ± 3.3 ka
De: 32.0 ± 4.0 ka	Lm: 34.8 ± 3.3 ka



TB-07-12

<u>CRONUS exp ages</u>	Du: 28.2 ± 3.5 ka
St: 33.1 ± 3.2 ka	Li: 27.3 ± 3.0 ka
De: 28.4 ± 3.6 ka	Lm: 30.8 ± 2.9 ka



TB-07-125

<u>CRONUS exp ages</u>	Du: 51.4 ± 6.4 ka
St: 66.6 ± 6.3 ka	Li: 49.7 ± 5.2 ka
De: 52.9 ± 6.6 ka	Lm: 59.5 ± 5.5 ka