result shows that genetic type of basement granite in north of Myanmar overland island arc is S-type granites related with subduction and collision. Zircons are euhedral-subhedral in shape and display oscillatory zoning in CL images as well as Th/U ratios (0.15–0.45), implying their magmatic origin. 21 points yield a group of weighted mean 206Pb/238U ages at (102.7±0.81) Ma (MSWD=0.23), which show similarity to (97.8±3.6) Ma in the northern part of sampling points and (106±7) Ma in the southern part of sampling points. These results demonstrated that basement granite in Myanmar overland island arc was formed during the Early Cretaceous, indicating occurrence of magmatic intrusion event. The amalgamation between Simeon and Sibumasu block was started since the breakup of Gondwana, the subduction and collision of western Simeon block was earlier than Early Cretaceous, which imply that Simeon block experienced the evolutionary stages of active continental margin in latter stage of Early Cretaceous and were a perfect developed trench-arc-basin system.

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**Observing the entire length and thermal annealing of unetched fission tracks in apatite**

Weixing Li1*, Maik Lang1, Andrew J. W. Gleadow2, Maxim V. Zdorovets3 and Rodney C. Ewing1

1 Departments of Earth & Environmental Sciences, Materials Sciences& Engineering, Nuclear Engineering & Radiological Sciences, University of Michigan, Ann Arbor, MI 48109, USA
2 School of Earth Sciences, The University of Melbourne, Melbourne, Vic 3010, Australia
3 Institute of Nuclear Physics, National Nuclear Centre, 010008 Astana, Kazakhstan
* Corresponding author: wxli@umich.edu

Tracks created by fission events in ceramics are randomly-oriented, linear radiation-damage regions about 10 to 25 µm in length but only several nm in diameter. In the absence of a method to observe the entire length of a latent, unetched track, the details of the structure and the process of the thermal-annealing of tracks have remained elusive, despite their importance to fission track thermochronology. Here, we have used a novel sample preparation technique, together with advanced transmission electron microscopy (TEM), to successfully image the entire length and in situ thermal annealing of latent tracks created by 80 MeV Xe ions implanted in apatite. Track annealing significantly increases as the track diameter decreases along the ion trajectory from an initial diameter of 8.9 nm to ~ 1.5 nm at the end of the track (total track length ~ 8.1 µm). The initial, rapid reduction in etched length during isothermal annealing can be essentially explained by the rapid annealing of the sections of the track with smaller diameters, as observed directly by TEM.

![Fig. 1. In situ TEM images of latent 80 MeV Xe ion tracks in apatite at different target depths (x) before and after thermal annealing. In (A) x = 0 µm; (B) x = 4.5 µm; and (C) x = 7.2 µm. The annealing rate is significantly dependent on the track diameter at different locations along the ion trajectories. The change in track size in A is insignificant after heating at 330 °C](image-url)
for 1 h and additional heating at 380 °C for 1 h. In contrast, significant segmentation and shrinkage of tracks is seen in B after the same heating treatment. The tracks in C almost disappear after a single heating at 330 °C for only 16 min.

References: