

2006 Fall Meeting  
Search Results

Cite abstracts as **Author(s) (2006), Title, *Eos Trans. AGU*,  
87(52), Fall Meet. Suppl., Abstract xxxxx-xx**

Your query was:  
**hinsbergen**

You've chosen **one** document:

---

HR: 0800h

AN: **T41C-1576**

TI: **Neogene transpressional mountain building in the Gobi Altai (Mongolia) was not associated with vertical axis rotations: no deviation from the Cretaceous APWP**

AU: **Straathof, G B**

EM: *straathof@geo.uu.nl*

AF: *Utrecht University, Paleomagnetic Laboratory 'Fort Hoofddijk',  
Budapestlaan 17, Utrecht, 3584 CD Netherlands*

AU: **Straathof, G B**

EM: *straathof@geo.uu.nl*

AF: *University of Leicester, Department of Geology, University Road,  
Leicester, LE1 7RH United Kingdom*

AU: **\* van Hinsbergen, D J**

EM: *hins@geo.uu.nl*

AF: *Utrecht University, Paleomagnetic Laboratory 'Fort Hoofddijk',  
Budapestlaan 17, Utrecht, 3584 CD Netherlands*

AU: **\* van Hinsbergen, D J**

EM: *hins@geo.uu.nl*

AF: *University of Leicester, Department of Geology, University Road,  
Leicester, LE1 7RH United Kingdom*

AU: **Langereis, C G**

EM: *langer@geo.uu.nl*

AF: *Utrecht University, Paleomagnetic Laboratory 'Fort Hoofddijk',  
Budapestlaan 17, Utrecht, 3584 CD Netherlands*

AU: **Cunningham, W**

EM: *wdc2@le.ac.uk*

AF: *University of Leicester, Department of Geology, University Road,  
Leicester, LE1 7RH United Kingdom*

AB: Following Paleozoic amalgamation of the Asian continent, the Mesozoic history of southern and eastern Mongolia was characterized by widespread sedimentation and volcanism. During the Cenozoic, collision between India and Asia led to a NNE-SSW directed compressive stress-field in central Asia, which in Mongolia initiated a regional array of left-lateral transpressive strike-slip faults in the south, and a right-lateral transpressive strike-slip system in the west, accommodating motion around a stable Precambrian basement block

(Hangay dome). Two end-member scenarios explain why the Mongolian strike-slip systems became transpressional: the first suggests that these strike-slip faults utilize obliquely oriented weak Paleozoic or Mesozoic zones in the basement. The second scenario suggests that initial strike-slip faults become transpressional as a result of vertical axis rotations, due to increased shortening from east to west in the Gobi Altai. To test these hypotheses, we carried out a paleomagnetic investigation in the northeastern Gobi Altai. Our fieldwork indicates that widespread early Cretaceous Mesozoic sedimentation and volcanism in the region is associated with rifting. Following deposition of the rift-sediments, at least four phases of localized magmatism occurred in the late Cretaceous, Paleocene, Oligocene and Neogene. We regionally sampled the lower Cretaceous basalts, and some younger lavas and basalt plugs. Approximately 900 samples were drilled in 10 localities in lower Cretaceous lavas, each subdivided into 7-15 sites of 7 samples each. These were then AF and thermally demagnetized. Curie temperatures around 560- 600°C indicate magnetite as the principal carrier of the magnetic signal. The results show a mean direction of  $D/I = 10.2/66.8$  ( $a_{95}=3.6$ ;  $k=177.5$ ), which does not statistically deviate from the published average Eurasian paleomagnetic direction for this time window ( $D/I = 13.6/62.4$ ;  $a_{95} = 1.7$ ). We thus conclude that Neogene transpressional mountain building in the Gobi Altai of southern Mongolia was not associated with rotation of strike-slip faults into a to include a compressional component. Moreover, we show that southern Mongolia has belonged to the Eurasian continent since at least the early Cretaceous.

DE: 1525 Paleomagnetism applied to tectonics: regional, global

DE: 3040 Plate tectonics (8150, 8155, 8157, 8158)

DE: 8011 Kinematics of crustal and mantle deformation

DE: 8111 Continental tectonics: strike-slip and transform

DE: 9320 Asia

SC: Tectonophysics [T]

MN: 2006 Fall Meeting

---

[New Search](#)

