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481 Papers published this week at [nature.com](http://nature.com)

### NEWS & VIEWS

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A debate over molecular understanding of long-term potentiation

Morgan Sheng; Roberto Malinow & Richard Huganir [SEE ARTICLE P.495](#)

#### 483 BIOENERGY

##### Biofuel production on the margins

The benefits of fuel produced from successional vegetation

Klaus Butterbach-Bahl & Ralf Kiese [SEE LETTER P.514](#)

#### 485 SOLAR PHYSICS

##### Towards ever smaller length scales

Dynamic coronal structures on scales of 150 kilometres

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#### 486 PALAEOONTOLOGY

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#### 487 CANCER

##### The to and fro of tumour spread

The roles of Twist1 and Prrx1 in the mesenchymal-epithelial transition

Bryce J W van Denderen & Erik W Thompson

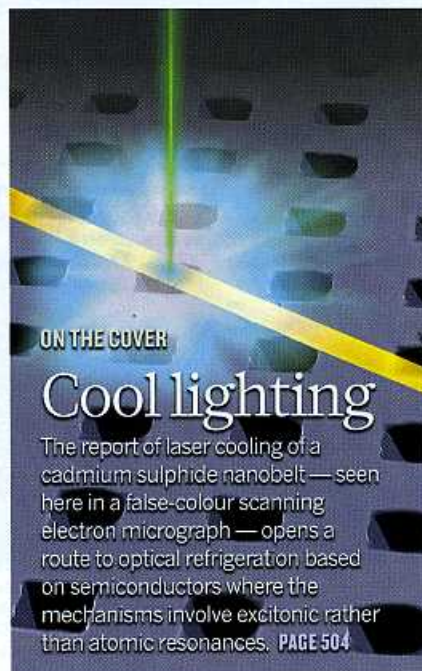
### ARTICLES

489 CLIMATE SCIENCE Eemian interglacial reconstructed from a Greenland folded ice core  
*NEEM community members*

495 NEUROSCIENCE LTP requires a reserve pool of glutamate receptors independent of subunit type  
*A J Granger, Y Shi, W Lu, M Cepas & R A Nicoll* [SEE N&V P.482](#)

### LETTERS

501 ASTROPHYSICS Energy release in the solar corona from spatially resolved magnetic braids  
*J W Cirtain et al.* [SEE N&V P.485](#)



504 PHOTONICS Laser cooling of a semiconductor by 40 kelvin  
*J Zhang, D Li, R Chen & Q Xiong*

509 PHYSICS Interface-engineered templates for molecular spin memory devices  
*K V Raman et al.*

514 ENVIRONMENTAL SCIENCE Sustainable bioenergy production from marginal lands in the US Midwest  
*I Gelfand et al.* [SEE N&V P.483](#)

518 EARTH SCIENCE Stable creeping fault segments can become destructive as a result of dynamic weakening  
*H Noda & N Lapusta*

522 ARCHAEOLOGY Earliest evidence for cheese making in the sixth millennium BC in northern Europe  
*M Salque et al.*

526 GENOMICS Insights into bilaterian evolution from three spiralian genomes  
*O Simakov et al.*

532 NEUROSCIENCE Rapid regulation of depression-related behaviours by

control of midbrain dopamine neurons  
*D Chaudhury et al.*

537 NEUROSCIENCE Dopamine neurons modulate neural encoding and expression of depression-related behaviour  
*K M Tye et al.*

542 CANCER Serine starvation induces stress and p53-dependent metabolic remodelling in cancer cells  
*O D K Maddocks et al.*

547 IMMUNOLOGY Apoptotic cell clearance by bronchial epithelial cells critically influences airway inflammation  
*I J Juncadella et al.*

552 VIROLOGY Functional and evolutionary insight from the crystal structure of rubella virus protein E1  
*R M DuBois et al.*

557 GENETICS RNAi triggered by specialized machinery silences developmental genes and retrotransposons  
*S Yamanaka et al.*

561 EPIGENETICS TET2 promotes histone O-GlcNAcylation during gene transcription  
*Q Chen, Y Chen, C Bian, R Fujiki & X Yu*

### ARCHAEOLOGY

## Cracking idea

Early lactate-intolerant farmers may have liked their cheese. [PAGE 522](#)

