

# CONTENTS

24 July 2014 / Vol 511 / Issue No 7510

## THIS WEEK

### EDITORIALS

#### 383 POLICY

##### The wrong kind of carbon cut

Australia's decision to repeal its carbon tax sends the wrong message

#### 383 PLASMA PHYSICS

##### Fusion furore

ITER should not derail projects seeking alternative routes to fusion power

#### 384 CLIMATE CHANGE

##### A fate sealed

Adaptation to a warming world is not easy when you're a seal on an island



### WORLD VIEW

#### 385 Chile needs better science governance and support

*Pablo Astudillo Besnier*  
The nation's researchers are being held back by scattered administration

### RESEARCH HIGHLIGHTS

#### 386 SELECTIONS FROM THE SCIENTIFIC LITERATURE

Cheese course / The heat is on / GM wheats / Frost on Mars / Ubiquitous authors / 'Dodo' extinct again / Clovis people down south



### SEVEN DAYS

#### 388 THE NEWS IN BRIEF

Darwin's library goes online / US quake map gets redrawn / Rosetta probe sees double / US finds local cases of chikungunya virus

## CAREERS

#### 499 DIVERSITY

##### Equal access

The best mentorship programmes show how students from minority groups have the chance to succeed in science

#### 500 CAREER BRIEFS

## NEWS IN FOCUS

#### 391 COMMUNITY

International AIDS conference mourns loss of delegates killed in plane crash

#### 392 POLICY

Outcry as Australia abandons carbon-pricing system

#### 393 GENETICS

Bonanza of genetic locations linked to schizophrenia lifts field

#### 394 PARTICLE PHYSICS

China lays plans for massive collider

#### 396 PLANETARY SCIENCE

Researchers wrestle with Mars data to rewrite the red planet's history

## FEATURES



### PLASMA PHYSICS

## The fusion upstarts

Venture capitalists breathe fresh life into alternative fusion technologies

PAGE 398

#### 402 SCIENCE AND POLITICS

##### Hello, Governor

What happens when politicians enlist the help of researchers?

## TECHNOLOGY

#### 493 CELL COMMUNICATION

##### Stop the microbial chatter

There is an alternative to killing bacterial pathogens — stop them cooperating and they may lose their ability to create a protective niche

## COMMENT



### 405 MEDICAL RESEARCH

#### Treat ageing

*Luigi Fontana, Brian K Kennedy, Valter D Longo, Douglas Seals & Simon Melov*

Research in both animals and humans needs to be refocused to help stave off the effects of old age

## BOOKS & ARTS

### 408 SCIENCE VISUALIZATION

#### Branching arguments

*Kevin Padian*

### 409 BOOKS IN BRIEF

## CORRESPONDENCE

410 Brain research comes cheap / Global data storage / Land creation in Yan'an / Herbicide management



## FUTURES

### 502 A long way from home

*Sylvia Spruck Wrigley*



# CONTENTS

24 July 2014 / Vol 511 / Issue No 7510

## RESEARCH

### NEW ONLINE

411 Papers published this week at nature.com

### NEWS & VIEWS

#### 412 SCHIZOPHRENIA

##### Genesis of a complex disease

Identification of 108 genetic loci associated with risk of schizophrenia  
Jonathan Flint & Marcus Munafò

SEE ARTICLE P.421

#### 413 EARTH SCIENCE

##### Rain on the parade

Surface uplift has shaped climate and landscape in the Bolivian Andes  
Alison M Anders

#### 414 POPULATION BIOLOGY

##### Fur seals signal their own decline

Climate change linked to higher heterozygosity in fur seals, but population decline  
Tim Coulson & Sonya Clegg

SEE LETTER P.462

#### 415 CLIMATE SCIENCE

##### Cold carbon storage

Sediments at thermokarst lake bottoms store large amounts of carbon  
Sebastian Sobek

SEE LETTER P.452

#### 417 GENE REGULATION

##### Fine-tuned amplification in cells

Contrary to previous reports, Myc targets select genes for transcription  
Chi V Dang

SEE LETTERS P.483 & P.488

#### 418 SOLID-STATE PHYSICS

##### Siphoning spins

How spin currents in topological insulators affect thin magnetic films  
Joo-Von Kim

SEE LETTER P.449

### ARTICLES

#### 421 SCHIZOPHRENIA Biological insights from 108 schizophrenia-associated genetic loci

Schizophrenia Working Group of the Psychiatric Genomics Consortium

SEE N&V P.412

#### 428 CANCER Enhancer hijacking activates GFI1 family oncogenes in medulloblastoma

P A Northcott et al.



### ON THE COVER

## Fighting chance

Antarctic fur seals (*Arctocephalus gazella*) at Bird Island, South Georgia. Once hunted almost to extinction, numbers have recovered. The seals are vulnerable to climate change but harsh conditions have selected for high genetic heterozygosity in females, which may help the species to respond via adaptation. **PAGES 414 & 462**

#### 435 STRUCTURAL BIOLOGY Structure of an Rrp6-RNA exosome complex bound to poly(A) RNA

E V Wasmuth, K Januszyk & C D Lima

### LETTERS

#### 440 ASTROPHYSICS Jet acceleration of the fast molecular outflows in the Seyfert galaxy IC 5063

C Tadhunter, R Morganti, M Rose, J B R Oonk & T Oosterloo

#### 444 QUANTUM PHYSICS Tracking photon jumps with repeated quantum non-demolition parity measurements

L Sun et al.

#### 449 CONDENSED MATTER Spin-transfer torque generated by a topological insulator

A R Mellnik et al. **SEE N&V P.418**

#### 452 BIOGEOCHEMISTRY A shift of thermokarst lakes from carbon sources to sinks during the Holocene epoch

K M Walter Anthony et al. **SEE N&V P.415**

#### 457 VOLCANOLOGY Zircons reveal magma fluxes in the Earth's crust

L Caricchi, G Simpson & U Schaltegger

#### 462 POPULATION BIOLOGY Climate change selects for heterozygosity in a declining fur seal population

J Forcada & J I Hoffman **SEE N&V P.414**

#### 466 NEUROSCIENCE *C. elegans* Punctin specifies cholinergic versus GABAergic identity of postsynaptic domains

B Pinan-Lucarré et al.

#### 471 NEUROSCIENCE Modality-specific thalamocortical inputs instruct the identity of postsynaptic L4 neurons

G Pouchelon et al.

#### 475 STRUCTURAL BIOLOGY Receptor binding by H10 influenza viruses

S G Vachieri et al.

#### 478 CANCER Ultraviolet radiation accelerates BRAF-driven melanomagenesis by targeting TP53

A Viros et al.

#### 483 GENE REGULATION Activation and repression by oncogenic MYC shape tumour-specific gene expression profiles

S Walz et al. **SEE N&V P.417**

#### 488 GENE REGULATION Selective transcriptional regulation by Myc in cellular growth control and lymphomagenesis

A Sabò et al. **SEE N&V P.417**

### BIOGEOCHEMISTRY

## Lake view

Permafrost-meltwater lakes — carbon source or carbon sink? **PAGE 452**



JALME FORCADA