International Conferer mics in Europe

CONTENTS

20 June 2013 / Vol 498 / Issue No 7454

THIS WEEK

EDITORIALS

271 SEISMOLOGY

Risk management

The Global Earthquake Model is the first step towards better hazard planning

271 NEUROSCIENCE

Brain blast

Electrical brain stimulation requires careful thought — and monitoring

272 HEALTH

Science prevails

Obama's flip-flopping over Plan B is a lesson in how not to do politics

WORLD VIEW

273 Sharing information is preferable to patenting

Colin Macilwain

The free exchange of scientific information should trump commercial concerns

RESEARCH HIGHLIGHTS

274 SELECTIONS FROM THE SCIENTIFIC LITERATURE



Vertebrate fluorescent protein /
Salt mars wetland restoration /
Dive with myoglobin / Activate
the right C–H bond / Plenty
more trash in the sea

SEVEN DAYS

276 THE NEWS IN BRIEF

Spanish researchers take to the streets / Chinese computer regains speed record / Jerome Karle dies

CAREERS

395 MOBILE APPS

A conference in your pocket

There are myriad tools to help you choose sessions and network

397 COLUMN

Roadside science

Carolyn Beans

The man or woman in the street can learn a lot from a chatty scientist — and vice versa

NATUREJOBS ADVERTISING FEATURE

Mid-Year Nature Events Directory

NEWS IN FOCUS



279 SOLAR PHYSICS NASA sets sights on neglected region of the Sun

280 PARTICLE
PHYSICS
Discovery of
four-quark particle
extends range of
matter

281 BIOTECHNOLOGY

Court ruling on Myriad gene patents leaves industry in confusion

282 EVOLUTION

Geneticists do battle over dog domestication



283 PHARMACEUTICALS

Head of GSK China sacked in dispute over published paper

284 SPACE EXPLORATION

Mars rover vies with history as it tries to out-distance Russia lunar vehicle

FEATURES

COMPUTING

Fuzzy logic

D-Wave courts controversy with its quantum computers

PAGE 286

290 SEISMOLOGY

Quake catcher

Ross Stein has global ambitions for earthquake-risk mapping

COMMENT



293 ENERGY AND CLIMATE

Positive energy

Chris Nelder

Scientists should be offering solutions

— not peddling doom and gloom

BOOKS & ARTS



ENTOMOLOGY

The apian way

Mark Winston finds the life of bees full of incident — and intrigue PAGE 296

297 BOOKS IN BRIEF

298 NEUROSCIENCE

Rise of the neurocrats Sandra Aamodt

CORRESPONDENCE

299 Brazil should invest in biodiversity / Not all collaboration is good / Managing
 sustainable goals / Intelligence priming

UBITUARY

300 Christian de Duve (1917–2013) Günter Blobel

FUTURES

400 Buzz off

John Grant

CONTENTS

20 June 2013 / Vol 498 / Issue No 7454

RESEARCH

NEW ONLINE

301 Papers published this week at nature.com

NEWS & VIEWS

302 FORUM: ATMOSPHERIC SCIENCE

The seeds of ice in clouds
Feldspar dominates ice nucleation
in mixed-phase clouds
Thomas Koop; Natalie Mahowald
SEE LETTER P.355

303 BEHAVIOURAL BIOLOGY

Archaeology meets primate technology

Spatial and temporal signatures of percussive tool use by capuchin monkeys Andrew Whiten

305 HIV

Integration triggers deathApoptosis of activated CD4⁺ T cells induced by DNA-PK

Anna Marie Skalka SEE LETTER P.376

306 BIOMIMETICS

David Lentink

Flying like a fly The first at-scale robotic fly

307 PHYSICS

Heavy calcium nuclei weigh in The masses of calcium-53 and calcium-54 nuclei Alexandra Gade SEE LETTER P.346

308 STRUCTURAL BIOLOGY

Signalling from disordered proteins Allostery in intrinsically disordered proteins Vincent J Hilser SEE LETTER P.390

310 VIROLOGY

The virus whose family expanded Unexpected genetic diversity of hepaciviruses and pegiviruses Oliver G Pybus & Rebecca R Gray

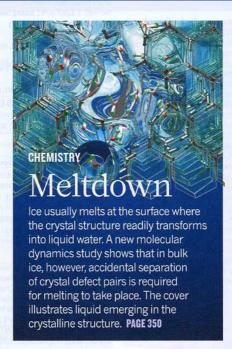
ARTICLES

d

313 DEVICES Anisotropic leaky-mode modulator for holographic video displays

D E Smalley, Q Y J Smithwick, V M Bove Jr, J Barabas & S Jolly

318 DEVELOPMENTAL BIOLOGY The linear ubiquitin-specific deubiquitinase gumby regulates angiogenesis E Rivkin et al.



- 325 NEUROSCIENCE RAS-MAPK-MSK1
 pathway modulates ataxin 1 protein
 levels and toxicity in SCA1
 J Park et al.
- 332 STRUCTURAL BIOLOGY Structural mechanism of cytosolic DNA sensing by cGAS F Civril et al.

LETTERS

- 338 ASTROPHYSICS The rapid assembly of an elliptical galaxy of 400 billion solar masses at a redshift of 2.3 H Fu et al.
- 342 PLANETARY SCIENCE Volcanism on Mars controlled by early oxidation of the upper mantle J Tuff, J Wade & B J Wood
- 346 NUCLEAR PHYSICS Masses of exotic calcium isotopes pin down nuclear forces

 F Wienholtz et al. SEE N&V P.307
- 355 CLIMATE SCIENCE The importance of feldspar for ice nucleation by mineral dust in mixed-phase clouds

J D Atkinson et al. SEE N&V P.302

- 359 PALAEONTOLOGY A Jurassic avialan dinosaur from China resolves the early phylogenetic history of birds P Godefroit et al.
- 363 NEUROSCIENCE Distinct behavioural and network correlates of two interneuron types in prefrontal cortex D Kvitsiani et al.
- 367 HEALTH SCIENCE Topographic diversity of fungal and bacterial communities in human skin K Findley et al.
- 371 CELL BIOLOGY Neutrophil swarms require LTB4 and integrins at sites of cell death in vivo T Lämmermann et al.
- 376 MICROBIOLOGY HIV-1 causes CD4 cell death through DNA-dependent protein kinase during viral integration A Cooper et al. SEE N&V P.305
- 380 IMMUNOLOGY cGAS produces a 2'-5'-linked cyclic dinucleotide second messenger that activates STING A Ablasser et al.
- 385 PLANT-SCIENCES Polymerase IV occupancy at RNA-directed DNA methylation sites requires SHH1 JA Law et al.
- 390 BIOPHYSICS Modulation of allostery by protein intrinsic disorder A C M Ferreon, J C Ferreon, P E Wright & A A Deniz SEE N&V P.308

