

NEWS

IN BRIEF

888 News at a glance

IN DEPTH

891 DEEP IN A MINE, EARTHQUAKE GOLD AWAITS

Shaft gives a 3-kilometer head start to drillers seeking the aftermath of a “fresh” rupture *By P. Voosen*

892 MYSTERIOUS UNCHANGING DNA FINDS A PURPOSE IN LIFE

Ultraconserved elements have developmental roles *By E. Pennisi*

893 NIH OVERHEAD PLAN DRAWS FIRE

White House wants to reduce indirect cost payments to universities from 28% to 10% of NIH’s research spending *By J. Kaiser*

► EDITORIAL P. 887

894 EGYPTIAN MUMMY DNA, AT LAST

First mummy genomes show that past conquests left little mark on ancient Egyptian DNA *By L. Wade*

895 SPACE RIPPLES MAY UNTANGLE BLACK HOLE TANGO

Latest gravitational-wave observation suggests stellar ghosts form first, pair later *By A. Cho*

896 SIBERIA YIELDS EARLIEST EVIDENCE FOR DOG BREEDING

Bones suggest that dogs pulled sleds 9000 years ago—implying humans domesticated dogs to put them to work *By D. Grimm*

FEATURES

898 THE POST-OP BRAIN

Surgery can cure—but it may take a toll on cognition. Some scientists blame a body-wide inflammatory response *By M. Leslie*

► PODCAST

901 BAT PATROL

In the equatorial African night, the Ebola virus may be on the wing *By K. Kupferschmidt*

► VIDEO

901



INSIGHTS

PERSPECTIVES

904 DECODING THE EVOLUTION OF SPECIES

Mutations in protein-coding regions are implicated in the evolution of a flightless cormorant *By K. L. Cooper*

► RESEARCH ARTICLE P. 921

906 GEARING UP MOLECULAR ROTARY MOTORS

A light- and heat-driven molecular machine achieves locked, synchronous motion *By M. Baroncini and A. Credi*

► REPORT P. 964

907 A MICROBIOME VARIABLE IN THE HIV-PREVENTION EQUATION

Vaginal microbes thwart an antiretroviral microbicide *By S. Tuddenham and K. G. Ghanem*

► RESEARCH ARTICLE P. 938

908 APPLYING PLASMONICS TO A SUSTAINABLE FUTURE

Plasmonic technologies may form components of a future clean and sustainable society *By A. Naldoni et al.*

910 IS ICE SHEET COLLAPSE IN WEST ANTARCTICA UNSTOPPABLE?

Most climate scenarios paint a bleak future for the West Antarctic Ice Sheet *By C. Hulbe*

POLICY FORUM

912 COMMITTING TO SOCIALLY RESPONSIBLE SEAFOOD

Ocean science must evolve to meet social challenges in the seafood sector

By J. N. Kittinger et al.

BOOKS ET AL.

914 MAKING THE ROUNDS

A richly illustrated compendium probes the colorful history of the circle *By K. Cooperrider*

915 IDIOSYNCRATIC DESIRES

An ornithologist argues for the evolution of beauty for beauty’s sake *By E. L. Milam*

LETTERS

916 THE PET TRADE’S ROLE IN DEFAUNATION

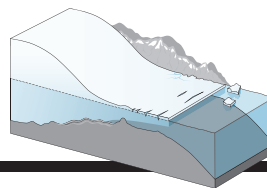
By M. W. Tingley et al.

Downloaded from <http://science.sciencemag.org/> on June 24, 2017



906 & 964

Synchrony in a molecular machine



910

Ice loss in Antarctica

916 SEX MATTERS: REPORT EXPERIMENTER GENDER

By C. D. Chapman et al.

917 CHEMICAL SAFETY MUST EXTEND TO ECOSYSTEMS

By J. R. Rohr et al.

RESEARCH

IN BRIEF

918 From *Science* and other journals

RESEARCH ARTICLES

921 EVOLUTIONARY GENOMICS

A genetic signature of the evolution of loss of flight in the Galapagos cormorant *A. Burga* et al.

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aal3345](https://doi.org/10.1126/science.aal3345)

► PERSPECTIVE P. 904; VIDEO

922 MARTIAN GEOLOGY

Redox stratification of an ancient lake in Gale crater, Mars *J. A. Hurowitz* et al.

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aah6849](https://doi.org/10.1126/science.aah6849)



912

923 STRUCTURAL BIOLOGY

Structural basis for antibody-mediated neutralization of Lassa virus

K. M. Hastie et al.

928 QUANTUM OPTICS

Entanglement distillation between solid-state quantum network nodes

N. Kalb et al.

933 CORAL FORMATION

Biological control of aragonite formation in stony corals *S. Von Euw* et al.

► VIDEO

938 HIV CLINICAL TRIALS

Vaginal bacteria modify HIV tenofovir microbicide efficacy in African women

N. R. Klatt et al.

► PERSPECTIVE P. 907

REPORTS

945 QUANTUM GASES

Bloch oscillations in the absence of a lattice *F. Meinert* et al.

948 GEOPHYSICS

Massive blow-out craters formed by hydrate-controlled methane expulsion from the Arctic seafloor

K. Andreassen et al.

953 OPTICS

Observation of Anderson localization in disordered nanophotonic structures

H. Herzig Sheinfux et al.

956 ORGANIC SYNTHESIS

A modular and enantioselective synthesis of the pleuromutilin antibiotics

S. K. Murphy et al.

960 MAGNETOSPHERES

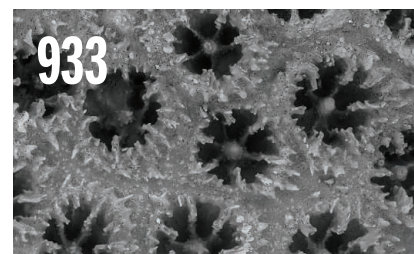
Structure, force balance, and topology of Earth's magnetopause

C. T. Russell et al.

964 MOLECULAR MACHINES

Locked synchronous rotor motion in a molecular motor *P. Štacko* et al.

► PERSPECTIVE P. 906



933

968 SIGNAL TRANSDUCTION

mTORC1 activity repression by late endosomal phosphatidylinositol 3,4-bisphosphate *A. L. Marat* et al.

DEPARTMENTS

887 EDITORIAL

Shortsighted priorities

By *Jeremy Berg*

► NEWS STORY P. 893

978 WORKING LIFE

Let's talk about language barriers

By *Aleksandra Deczkowska*

ON THE COVER



The Lassa virus glycoprotein in its trimeric, viral surface state (orange) bound to a fragment of a neutralizing antibody from a human survivor (white). A second, empty antibody binding site

is illuminated. Bound antibody bridges different monomers in the trimer to prevent conformational changes required for infection. The crystal structure determined by *Hastie et al.* provides a template for vaccine development. See page 923.

Illustration: *C. Bickel/Science*; Coordinates: *Kathryn Hastie and Erica Ollmann Saphire, The Scripps Research Institute*

Science Staff	886
New Products	973
Science Careers	974

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Periodicals mail postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 2017 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$165 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$1659; Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery) \$89. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request. GST #R1254-88122. Publications Mail Agreement Number 1069624. Printed in the U.S.A. Change of address: Allow 4 weeks, giving old and new addresses and 8-digit account number. Postmaster: Send change of address to AAAS, P.O. Box 96178, Washington, DC 20090-6178. Single-copy sales: \$23.00 current issue, \$28.00 back issue prepaid includes surface postage; bulk rates on request. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that \$35.00 per article is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923. The identification code for Science is 0036-8075. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.

Science

356 (6341)

Science **356** (6341), 887-978.

ARTICLE TOOLS

<http://science.sciencemag.org/content/356/6341>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.