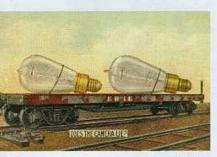


page 546



page 551

SPECIAL SECTION

Exoplanets

INTRODUCTION

Alien Worlds Galore

NEWS

MANN : De :

Gallery of Planet Hunters 566

... And a Glossary of Their Quarry

>> Science Podcast

REVIEWS

572 Observed Properties of Extrasolar Planets

A. W. Howard

Exoplanet Habitability

S. Seager

>> Science Podcast

>> News story p. 542; Report p. 587; Planet Hunters slideshow; and more at www.sciencemag.org/special/exoplanets

EDITORIAL

Is Any Science Safe? Kenneth Prewitt

NEWS OF THE WEEK

A roundup of the week's top stories

NEWS & ANALYSIS

- Bill Would Set New Rules 534 for Choosing NSF Grants
- Research in Limbo as Harvard 535 Moves to Close Center
- Bill and Melinda Gates Talk Science 536
- Scientists Clash Swords Over Future 539 of GM Food Crops in India
- 540 Hansen's Retirement From NASA Spurs Look at His Legacy

NEWS FOCUS

- 542 Mr. Borucki's Lonely Road to the Light >> Exoplanets section p. 565; Report p. 587
- Taking the Pulse of a Ravaged Ocean The Pacific Swallows Fukushima's Fallout

LETTERS

Geoengineering: Guidance Exists P. S. Corden

> Geoengineering: Perilous Particles B. Fodeel et al.

- Life in Science: The Legend of Owen 549
- **TECHNICAL COMMENT ABSTRACTS** 549

BOOKS ET AL.

Surfaces and Essences D. Hofstadter and E. Sander, reviewed by K. J. Holyoak

Faking It M. Fineman, curator; Faking It M. Fineman

POLICY FORUM

Global Research Integrity Training N. H. Steneck

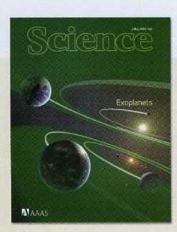
ON THE WEB THIS WEEK

>> Special Issue Slideshow

Check out a gallery of planet hunters.

>> Find More Online

Check out Science Express, our podcast, videos, daily news, our research journals, and Science Careers at www.sciencemag.org.



Stylized comparison of the inner solar system (top) and Kepler-62 (bottom), a five-planet system about 1200 light-years away. Like our solar system, Kepler-62 hosts two planets in its habitable zone (depicted in green), the region around a star where a planet could conceivably maintain liquid water on its surface. The special section beginning on page 565 summarizes what we currently know about extrasolar planets.

Illustration: NASA/Jet Propulsion Laboratory-Caltech/T. Pyle

DEPARTMENTS

This Week in Science 523

526 Editors' Choice

Science Staff 528

New Products 643

Science Careers

PERSPECTIVES

- Recombinatorial Logic Y. Benenson >> Report p. 599
- Seeing Gravitational Waves 555 M. M. Kasliwal
- 556 Tracking Marine Pollution J. E. Elliott and K. H. Elliott
- Silencing a Metabolic Oncogene 558 J. Kim and R. J. DeBerardinis >> Reports pp. 622 and 626
- Unconventional Secretion, 559 **Unconventional Solutions** M. Zhang and R. Schekman
- 561 Obey the Peptide Assembly Rules M. S. Ardejani and B. P. Orner >> Report p. 595
- As Good as Chocolate 562 K. Palczewski and P. D. Kiser >> Reports pp. 610 and 615

RESEARCH ARTICLE

Emergence and Frustration of Magnetism with Variable-Range Interactions in a Quantum Simulator R. Islam et al. Coulomb interactions in a system of 16 trapped ions are used to simulate magnetism with varying degrees of frustration.

REPORTS

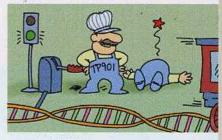
- Kepler-62: A Five-Planet System with Planets of 1.4 and 1.6 Earth Radii in the Habitable Zone W. J. Borucki et al. The Kepler mission detected a five-planet system with two small planets in the habitable zone of a star lighter than the Sun. >> News story p. 542; Exoplanets section p. 565
- Complex N-Heterocycle Synthesis via Iron-Catalyzed, Direct C-H **Bond Amination** E. T. Hennessy and T. A. Betley An iron catalyst facilitates carbon-nitrogen bond formation in previously unreactive substrates.
- Self-Assembling Cages from Coiled-Coil Peptide Modules J. M. Fletcher et al. Hexagonal networks form from heterodimeric and homotrimeric coiled coils and create ~100-nanometer-diameter cages. >> Perspective p. 561

- **Amplifying Genetic Logic Gates** J. Bonnet et al. A genetic circuit architecture resembling a transistor can be engineered into individual live cells.
 - >> Perspective p. 554
- Controlled Flight of a Biologically 603 Inspired, Insect-Scale Robot K. Y. Ma et al. A fly-scale, flapping-wing robot has been fabricated and can be controlled to perform unconstrained flight maneuvers.
- 3D Reconstruction of the Source and Scale of Buried Young Flood Channels on Mars G. A. Morgan et al. Radar data taken from orbit reveal the complex morphology of buried flood channels in a young region of Mars.
- Structural Basis for Molecular Recognition 610 at Serotonin Receptors C. Wang et al.
- Structural Features for Functional Selectivity at Serotonin Receptors D. Wacker et al. Structures of serotonin receptor family members in complex with the fungal alkaloid ergot offer clues for drug designers. >> Perspective p. 562
- R-Loop Stabilization Represses Antisense 619 Transcription at the Arabidopsis FLC Locus Q. Sun et al. A homeodomain protein limits expression of
- antisense transcripts involved in flowering
- Targeted Inhibition of Mutant IDH2 in Leukemia Cells Induces Cellular Differentiation F. Wang et al.
- Growth and Promotes Differentiation of Glioma Cells D. Rohle et al. A small molecule that inhibits a mutant enzyme in tumors slows malignant growth by inducing cancer cell differentiation.

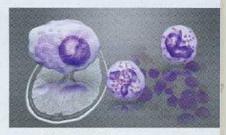
An Inhibitor of Mutant IDH1 Delays

>> Perspective p. 558

626



pages 554 & 599



pages 558, 622, & 626

- Disparate Individual Fates Compose 630 Robust CD8+ T Cell Immunity V. R. Buchholz et al.
- 635 Heterogeneous Differentiation Patterns of Individual CD8+ T Cells C. Gerlach et al. The single-cell dynamics as cytotoxic T cells respond to a bacterial infection are analyzed in mice.
- Neural Decoding of Visual Imagery **During Sleep** T. Horikawa et al. Machine-learning models can predict specific visual dream contents from brain activity measurement alone.

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 © 2013 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (S1 issues): 5499, Foreign postage seatral. Mexico, Caribbean fourface mails 555, other countries (air assist delivery) 885. First class, airmail, student, and emeritus rates on request. Canadian rates with G5T available upon request, G5T #1254 88122. Publications Mail Agreement Number 1049/24. Principed in the U.S. delivery) 585. First class, airmail, 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: \$10.00 current issue, \$15.00 back issue prepaid includes surface postage; bulk rates on request. Authorization to photocopy material for internal or personal use under circumstances not failing within the fair use provisions of the Copyright fact is granted by AAAS to therries and other user registered with the Copyright Clearance Centerhed/CCC Transactional Reporting Service, provided that \$30.00 per article is paid directly to CCC, 28 posewood Drive, Damers, MA 01923. The identification code for Science is 0036-8075. Science is indexed in the Reader's Guide to Periodical Elevature and in several specialized indexes.