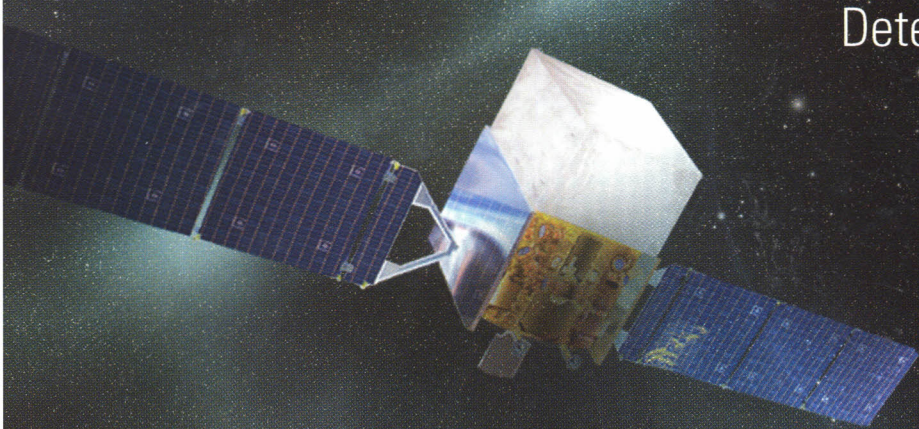


14 August 2009 | \$10

Science

Fermi
Detecting Gamma-Ray Pulsars



 AAAS

EDITORIAL

- 793 New Land Reform in Nigeria
Akin L. Mabogunje

NEWS OF THE WEEK

- 798 Northern India's Groundwater Is Going, Going, Going ...
- 799 Running at Half-Energy Keeps LHC in Race for Discoveries
- 799 U.S. Panel Urges Clearer, Cleaner Role for Science
- 801 Chu Lays Out an Agenda for PCAST and Asks for Help
- 801 From *Science's* Online Daily News Site
- 802 Newsmaker Interview: Margaret Hamburg Aims to Strengthen FDA Science
- 803 Recipe for Induced Pluripotent Stem Cells Just Got Clearer
- 803 From the *Science* Policy Blog

NEWS FOCUS

- 804 Leaping the Efficiency Gap
Soap Operas to Save Energy
Many More More-Efficient Computers
Wanted: Help With Building Design
The Quest for White LEDs Hits the Home Stretch
Aircraft Designers Shoot for Savings on the Wing
Making Use of Excess Heat
[>> Science Podcast](#)

LETTERS

- 812 Evolution of the Monkey Crouch
E. A. Wasserman and M. S. Blumberg
Energy Strategies and Efficiency
M. S. Briggs
Response
J. E. Campbell et al.
Mapping Language Boundaries
W. Shearer
Plagiarism: Transparency Required
J. Loadman
Plagiarism: Consider the Context
M. Roig

No Paradox for Invasive Plants
A. Meisner et al.
Clarifying Coals
S. Edwards

815 CORRECTIONS AND CLARIFICATIONS

BOOKS ET AL.

- 816 DNA
L. L. McCabe and E. R. B. McCabe,
reviewed by M. A. Goldman
- 817 Conservation Psychology
S. Clayton and G. Myers,
reviewed by P. Verbeek

POLICY FORUM

- 818 Children and Population Biobanks
D. Gurwitz et al.

PERSPECTIVES

- 820 Fire and Stone
J. Webb and M. Domanski
[>>Report p. 859](#)
- 821 Gamma-Ray Pulsars Old and New
J. P. Halpern
[>> Research Article p. 840;](#)
[Reports pp. 845 & 848](#)
- 822 Cellulosic Biofuels—Got Gasoline?
J. R. Regalbuto
- 824 Monkeys Like Mimics
J. Call and M. Carpenter
[>>Report p. 880](#)
- 825 How Much Sleep Do We Need?
H. Hor and M. Tafti
[>>Report p. 866](#)
- 826 Friction in Motor Proteins
C. Veigel and C. F. Schmidt
[>>Report p. 870](#)

REVIEW

- 828 Strategic Reading, Ontologies, and the Future of Scientific Publishing
A. H. Renear and C. L. Palmer

CONTENTS continued >>



page 804



page 817



COVER

Pulsars in our Galaxy newly discovered by the Fermi Gamma-ray Space Telescope, launched in June 2008. The objects emit broad gamma-ray beams that have enabled Fermi to locate a never-before-seen population. Fermi has also seen pulsars with millisecond periods and has detected at least one globular cluster (center left). See the Research Article and two Reports beginning on page 840.

Image: NASA/U.S. Department of Energy/Fermi LAT
Collaboration/Sonoma State University/Aurore Simonnet

DEPARTMENTS

- 791 This Week in *Science*
- 794 Editors' Choice
- 796 *Science* Staff
- 797 Random Samples
- 886 New Products
- 887 *Science* Careers

BREVIA

833 Local Adaptation of Bacteriophages to Their Bacterial Hosts in Soil

M. Vos et al.

A host-parasite system indicates how ecological and evolutionary mechanisms shape the distribution of microbes in soil.

RESEARCH ARTICLES

834 Lysine Acetylation Targets Protein Complexes and Co-Regulates Major Cellular Functions

C. Choudhary et al.

A proteomic-scale analysis of protein acetylation suggests that it is an important biological regulatory mechanism.

840 Detection of 16 Gamma-Ray Pulsars Through Blind Frequency Searches Using the Fermi LAT

A. A. Abdo et al.

Most of these identifications correspond to gamma-ray sources long suspected to be pulsars.

>>Perspective p. 821; Reports pp. 845 & 848

REPORTS

845 Detection of High-Energy Gamma-Ray Emission from the Globular Cluster 47 Tucanae with Fermi

A. A. Abdo et al.

The Fermi Large Area Telescope reveals up to 60 millisecond pulsars in this globular cluster, twice as many as predicted by radio observations.

>>Perspective p. 821; Research Article p. 840; Report p. 848

848 A Population of Gamma-Ray Millisecond Pulsars Seen with the Fermi Large Area Telescope

A. A. Abdo et al.

These objects appear to share a common emission mechanism with standard gamma-ray pulsars.

>>Perspective p. 821; Research Article p. 840; Report p. 845

852 Impact of Anode Microstructure on Solid Oxide Fuel Cells

T. Suzuki et al.

A porous form of the oxide anode of a fuel cell with a zirconia-based electrolyte reduces its operating temperature.

855 Docking in Metal-Organic Frameworks

Q. Li et al.

Guest molecules bind site-specifically in macrocycles incorporated into the ligands of a metal organic framework solid.

859 Fire As an Engineering Tool of Early Modern Humans

K. S. Brown et al.

Early modern humans had used fire to improve the fracturing of silcrete in making tools in South Africa by 72,000 years ago.

>>Perspective p. 820; Science Podcast

862 Mesotocin and Nonapeptide Receptors Promote Estrildid Flocking Behavior

J. L. Goodson et al.

Oxytocin and oxytocin-like receptors control group size preference in a songbird, suggesting an evolutionarily conserved role in social affiliation.

866 The Transcriptional Repressor DEC2 Regulates Sleep Length in Mammals

Y. He et al.

Some people are genetically determined to get by with less sleep than other people.

>>Perspective p. 825

870 Protein Friction Limits Diffusive and Directed Movements of Kinesin Motors on Microtubules

V. Bormuth et al.

Rupture of bonds between a molecular machine and its track creates friction, which constrains speed and efficiency.

>>Perspective p. 826

874 Mechanistic Analysis of a Dynamin Effector

L. L. Lackner et al.

During mitochondrial division, a pair of proteins interacts to promote membrane scission.

877 ER Stress Controls Iron Metabolism Through Induction of Hecpudin

C. Vecchi et al.

Stress signals in the endoplasmic reticulum activate a transcription factor that induces expression of an iron-regulatory hormone.

880 Capuchin Monkeys Display Affiliation Toward Humans Who Imitate Them

A. Paukner et al.

The chameleon effect also operates in monkeys.

>>Perspective p. 824; Science Podcast

883 Mindblind Eyes: An Absence of Spontaneous Theory of Mind in Asperger Syndrome

A. Senju et al.

Asperger syndrome individuals do not pass a nonverbal false-belief test.

CONTENTS continued >>



pages 820 & 859



page 862

SCIENCEONLINE

SCIENCEEXPRESS

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High-Detectivity Polymer Photodetectors with Spectral Response from 300 nm to 1450 nm
X. Gong et al.

Well-designed polymer photodetectors show performance comparable with the best inorganic devices.

10.1126/science.1176706

An Acidic Matrix Protein, Pif, Is a Key Macromolecule for Nacre Formation
M. Suzuki et al.

A matrix protein is identified that regulates nacre formation in the Japanese pearl oyster.

10.1126/science.1173793

The Molecular Basis of Nacre Formation
N. Kröger

A protein complex guides the intricate process of nacre formation in mollusk shells.

10.1126/science.1177055

Formation of ArF from LPdAr(F): Catalytic Conversion of Aryl Triflates to Aryl Fluorides
D. A. Watson et al.

A catalyst enables versatile carbon-fluorine bond formation using simple fluoride salts.

10.1126/science.1178239

Evidence for Obliquity Forcing of Glacial Termination II

R. N. Drysdale et al.

Marine records suggest that the early onset of the penultimate deglaciation was due to changes in Earth's obliquity.

10.1126/science.1170371

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Mares that form close friendships have more and healthier offspring.

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Researchers investigate mysterious incident off Hawaii 5 years ago.

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RESEARCH ARTICLE: Neuronal and Intestinal Protein Kinase D Isoforms Mediate Na⁺ (Salt Taste)–Induced Learning

Y. Fu et al.

Protein kinase D signaling in the intestine and nervous system enables worms to learn to avoid salt.

RESEARCH ARTICLE: Cooperativity Between T Cell Receptor Complexes Revealed by Conformational Mutants of CD3ε

N. Martínez-Martin et al.

A mutant CD3ε subunit that cannot change conformation in response to ligand binding exerts dominant-negative inhibition of T cell responses.

PERSPECTIVE: Actin and Microtubule-Based Cytoskeletal Cues Direct Polarized Targeting of Proteins in Neurons

D. B. Arnold

Delivery of proteins to axons or dendrites depends on interactions between molecular motors and the cytoskeleton.

PERSPECTIVE: New Complexity in Differentiating Stem Cells Toward Hepatic and Pancreatic Fates

S. S. Huppert and M. A. Magnuson

Programming of the liver and pancreas is controlled by a dynamic, temporally coordinated signaling network.

SCIENCE CAREERS

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H. Akil

The joy of playing with her granddaughter tickles the neurons of a noted neuroscientist.

Visa Delays Put Science Careers at Risk

L. Chiu

"Administrative review" is leaving some foreign scientists stranded overseas.

Perspective: Top 10 Tips to Maximize Your Mentoring

J. Lakoski

Cultivating and nurturing mentoring relationships is an essential career skill.

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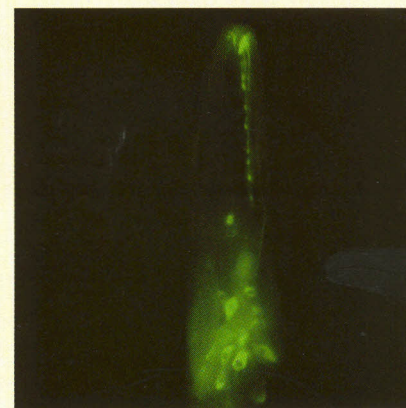
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Two Kaimanawa mares hang out.



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Neuronal PKD in *C. elegans*.

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A History of Beginnings

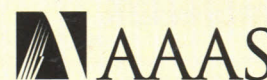
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