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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

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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.

845 Detection of High-Energy Gamma-Ray Emission from the Globular Cluster 47 Tucanae with Fermi
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The Fermi Large Area Telescope reveals up to 60 millisecond pulsars in this globular cluster, twice as many as predicted by radio observations.

848 A Population of Gamma-Ray Millisecond Pulsars Seen with the Fermi Large Area Telescope
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These objects appear to share a common emission mechanism with standard gamma-ray pulsars.

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855 Docking in Metal-Organic Frameworks
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859 Fire As an Engineering Tool of Early Modern Humans
K. S. Brown et al.
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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.

870 Protein Friction Limits Diffusive and Directed Movements of Kinesin Motors on Microtubules
V. Bormuth et al.
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874 Mechanistic Analysis of a Dynamin Effector
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N. Kröger
A protein complex guides the intricate process of nacre formation in mollusk shells. 10.1126/science.1177379

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

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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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Free Career Resources for Scientists
In Person: The Pursuit of Happiness
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The joy of playing with her granddaughter tickles the neurons of a noted neuroscientist.

Visa Delays Put Science Careers at Risk
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“Administrative review” is leaving some foreign scientists stranded overseas.

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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. Martinez-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.

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