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# Science

LCROSS



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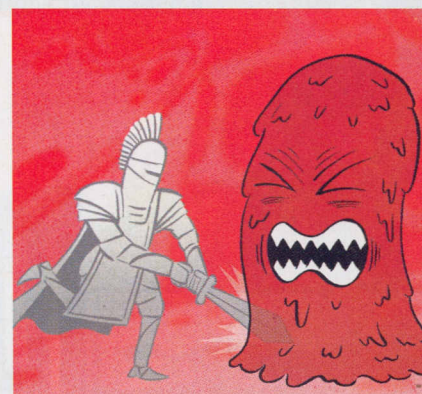
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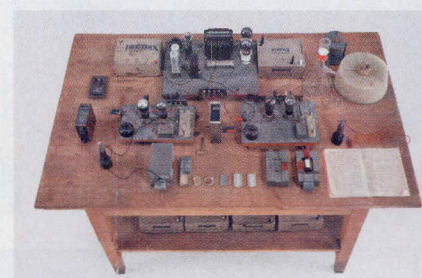
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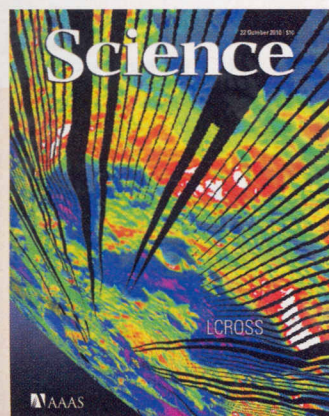
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## COVER

Surface temperature map of the south polar region of the Moon acquired by the Lunar Reconnaissance Orbiter Diviner Lunar Radiometer Experiment. Blue and violet areas are intensely cold impact craters. The Lunar Crater Observation and Sensing Satellite (LCROSS) spacecraft struck one of these craters (near the center of the frame), revealing the presence of water ice and other frozen volatiles. See the six research papers beginning on page 463.

Image: David A. Paige/UCLA/JPL/GSFC/NASA

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- 489 **Oscillatory Mass Transport in Vapor-Liquid-Solid Growth of Sapphire Nanowires**  
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- 493 **Species Selection Maintains Self-Incompatibility**  
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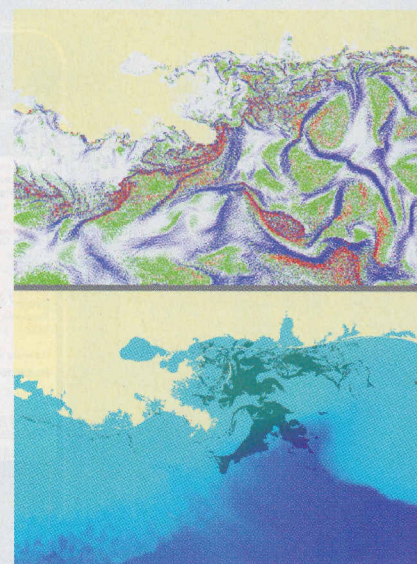
- 512 **Widespread Divergence Between Incipient *Anopheles gambiae* Species Revealed by Whole Genome Sequences**  
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- 514 **SNP Genotyping Defines Complex Gene-Flow Boundaries Among African Malaria Vector Mosquitoes**  
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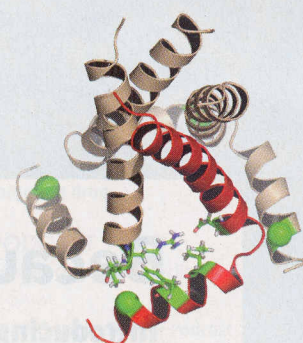
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## SCIENCEONLINE

## SCIENCEEXPRESS

[www.scienceexpress.org](http://www.scienceexpress.org)

**Fate Mapping Analysis Reveals That Adult Microglia Derive from Primitive Macrophages**  
*F. Ginhoux et al.*

The developmental origins of adult microglia are revealed.

10.1126/science.1194637

**Peripherally Applied A $\beta$ -Containing Inoculates Induce Cerebral  $\beta$ -Amyloidosis**

*Y. S. Eisele et al.*

Amyloid-containing brain extracts can "infect" susceptible Alzheimer's disease model animals.

10.1126/science.1194516

**Kinetic Scaffolding Mediated by a Phospholipase C- $\beta$  and G $_q$  Signaling Complex**

*G. L. Waldo et al.*

A crystal structure shows how the two components of a central signaling complex regulate each other.

10.1126/science.1193438

**Efficient Atmospheric Cleansing of Oxidized Organic Trace Gases by Vegetation**

*T. Karl et al.*

Deciduous trees enzymatically remove oxygenated volatile organic compounds from the atmosphere.

10.1126/science.1192534

**Glacial Silicic Acid Concentrations in the Southern Ocean**

*M. J. Ellwood et al.*

Silicon isotope distributions in sponges contain the signature of ocean nutrient distributions during the last glacial period.

10.1126/science.1194614

## SCIENCENOW

[www.sciencenow.org](http://www.sciencenow.org)

Highlights From Our Daily News Coverage

**Caribbean Coral Die-Off Could Be Worst Ever**  
Warm waters are bleaching reefs throughout the islands.

**Politicians, Watch Your Grammar**  
Sentence phrasing influences whether voters feel a candidate is electable.

**The Cavemen's Complex Kitchen**  
Our ancestors ground flour as early as 30,000 years ago.

## SCIENCESIGNALING

[www.sciencesignaling.org](http://www.sciencesignaling.org)

The Signal Transduction Knowledge Environment

**RESEARCH ARTICLE: Single-Cell Analysis Reveals That Insulation Maintains Signaling Specificity Between Two Yeast MAPK Pathways with Common Components**

*J. C. Patterson et al.*

Yeast cells can respond simultaneously to pheromone and hyperosmotic stress.

**PERSPECTIVE: Nuclear Emancipation—A Platelet Tour de Force**

*S. L. Spinelli et al.*

Transcription factors find new functions in these anucleated cells.

**JOURNAL CLUB: Role of Syntaxin 4 in Activity-Dependent Exocytosis and Synaptic Plasticity in Hippocampal Neurons**

*P. Mohanasundaram and M. M. Shanmugam*

Exocytosis at syntaxin-4-enriched membrane domains is important for long-term potentiation.

**NETWATCH: Albert Lasker Basic Medical Research Award 2010 Winners**

The researchers who discovered leptin are recognized for their achievement; in Awards and Announcements.

**NETWATCH: Lasker-DeBakey Clinical Medical Research Award 2010 Winner**

The scientist who discovered VEGF and a therapy targeting VEGF is recognized for his contribution to clinical science; in Awards and Announcements.

## SCIENCECAREERS

[www.sciencecareers.org/career\\_magazine](http://www.sciencecareers.org/career_magazine)

Free Career Resources for Scientists

**Experimental Error: Electile Dysfunction**  
*A. Ruben*

Over tea, our columnist considers what the congressional elections might mean for the prospects of science and scientists.

**Making a Difference in the Classroom and on the Stage**

*E. Ben-Ari*

Molecular biologist Jeff Polish loves an audience, whether they are sitting at desks or on chairs.

## SCIENCETRANSLATIONAL MEDICINE

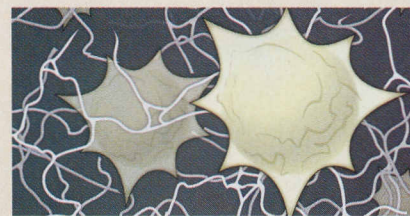
[www.sciencetranslationalmedicine.org](http://www.sciencetranslationalmedicine.org)

Integrating Medicine and Science

**PERSPECTIVE: Metabolic Syndromes and Malignant Transformation—Where the Twain Shall Meet**

*N. Bhagwat and R. L. Levine*

Some patients with a rare metabolic disorder have a germline mutation resembling somatic mutations in certain cancers.



SCIENCESIGNALING

Controlling platelet activation.

**RESEARCH ARTICLE: Reversal of Depressed Behaviors in Mice by p11 Gene Therapy in the Nucleus Accumbens**

*B. Alexander et al.*

**PERSPECTIVE: p11 and Gene Therapy for Severe Psychiatric Disorders—A Practical Goal?**  
*G. Chen et al.*

Decreased expression of the p11 protein in the brain's nucleus accumbens correlates with depression.

**RESEARCH ARTICLE: An Integrated Genomic and Epigenomic Approach Predicts Therapeutic Response to Zebularine in Human Liver Cancer**

*J. B. Andersen et al.*

An epigenetic signature predicts whether liver cancer patients will respond to an epigenome-targeting drug.

## SCIENCEPODCAST

[www.sciencemag.org/multimedia/podcast](http://www.sciencemag.org/multimedia/podcast)

Free Weekly Show

Download the 22 October Science Podcast to hear about detection of water on the Moon, environmental exposure and disease risk, advances in cancer immunotherapy, and more.

## SCIENCEINSIDER

[news.sciencemag.org/scienceinsider](http://news.sciencemag.org/scienceinsider)

Science Policy News and Analysis

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