EDITORIAL
647 Tackling Human Fungal Infections
Gordon D. Brown et al.
>> Science Podcast

NEWS OF THE WEEK
654 A roundup of the week’s top stories

NEWS & ANALYSIS
658 Europe Picks Jupiter Probe; Runners-Up Vow to Press On
659 Death of California Researcher Spurs Investigation
660 Venus’s Rare Sun Crossing May Aid Search for Exoplanets
661 Reprise of First Experiment Casts Doubt on Supersolid Helium

NEWS FOCUS
662 Primeval Land Rises From the Ashes
>> Science Podcast
664 Researchers Set Course to Blockade Ballast Invaders
A Foul Problem
666 With Novel Paint, Chemist Aims to Vanquish the Vinchuca

LETTERS
668 Conservation Concerns in the Deep
A. C. Hartmann and L. A. Levin
Presumed Guilt in the Anthrax Case
J. Guillemin
Response
D. A. Relman
668 NextGen VOICES
670 CORRECTIONS AND CLARIFICATIONS

BOOKS ET AL.
671 How We Remember
M. E. Hasselmo, reviewed by L. L. Colgin
672 Harvest the Wind
P. Warburg, reviewed by D. Reicher

POLICY FORUM
673 ELSI 2.0 for Genomics and Society
J. Kaye et al.

PERSPECTIVES
675 FGF21 Takes a Fat Bite
C. Cantó and J. Auwerx
676 Understanding Earthquakes
P. Segall
>> Report p. 728
678 PARP-1 Activation—Bringing the Pieces Together
J.-P. Gagné et al.
>> Report p. 728
679 Intertwining Electron Tunneling with Light
M. H. Szmyrniska
>> Report p. 704
681 RNA Plays Meiotic Matchmaker
A. F. Dernburg
>> Report p. 732
682 The Ice Age Carbon Puzzle
E. Brook
>> Report p. 711

CONTENTS continued >>

COVER
Enhanced-color view of the “Snowman” craters (Marcia, Calpurnia, and Minucia) on the asteroid Vesta generated by combining imaging and topography data from NASA's Dawn spacecraft. The 60-kilometer-wide Marcia crater (at bottom) is one of the youngest large craters on Vesta with a small central peak, as well as light and dark streaks on its walls. See the series of six Reports beginning on page 684.

Image generated using Dawn Framing Camera Images: Lucille Le Corre (MPS), David O’Brien (PSI), Vishnu Reddy (MPS/UND); PI of Dawn mission: Christopher T. Russell (UCLA); Dawn Framing Camera leader: Andreas Nathues (MPS), significant contributions from Ralf Jaumann (DLR)

DEPARTMENTS
643 This Week in Science
649 Editors’ Choice
652 Science Staff
751 New Products
752 Science Careers
REPORTS

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>684</td>
<td>Dawn at Vesta: Testing the Protoplanetary Paradigm</td>
<td>C. T. Russell et al.</td>
<td>A chemical screen using mesenchymal stem cells identifies a small molecule, kartogenin, that can promote chondrogenesis.</td>
</tr>
<tr>
<td>687</td>
<td>Vesta’s Shape and Morphology</td>
<td>R. Jaumann et al.</td>
<td></td>
</tr>
<tr>
<td>690</td>
<td>The Violent Collisional History of Asteroid Vesta</td>
<td>S. Marchi et al.</td>
<td>The inhibitor Leptf diffuses more widely than the activator Nodal.</td>
</tr>
<tr>
<td>694</td>
<td>The Geologically Recent Giant Impact Basins at Vesta’s South Pole</td>
<td>P. Schenk et al.</td>
<td></td>
</tr>
<tr>
<td>697</td>
<td>Spectroscopic Characterization of Mineralogy and Its Diversity Across Vesta</td>
<td>M. C. De Sanctis et al.</td>
<td></td>
</tr>
<tr>
<td>700</td>
<td>Color and Albedo Heterogeneity of Vesta from Dawn</td>
<td>V. Reddy et al.</td>
<td></td>
</tr>
<tr>
<td>704</td>
<td>Coupling Quantum Tunneling with Cavity Photons</td>
<td>P. Cristofolini et al.</td>
<td>Optical coupling is used to control the tunneling of electrons between a pair of quantum wells.</td>
</tr>
<tr>
<td>711</td>
<td>Carbon Isotope Constraints on the Deglaciation C02 Rise from Ice Cores</td>
<td>J. Schmitt et al.</td>
<td>The stable isotopic composition of the carbon in carbon dioxide over the last 24,000 years illuminates past carbon cycle behavior.</td>
</tr>
<tr>
<td>714</td>
<td>Ancient Maya Astronomical Tables from Xultun, Guatemala</td>
<td>W. A. Saturno et al.</td>
<td>Wall paintings in a Mayan temple dating to the 9th century C.E. show calculations of Moon and, perhaps, planetary motion.</td>
</tr>
<tr>
<td>717</td>
<td>A Stem Cell-Based Approach to Cartilage Repair</td>
<td>K. Johnson et al.</td>
<td></td>
</tr>
<tr>
<td>721</td>
<td>Differential Diffusivity of Nodal and Lefty Underlies a Reaction-Diffusion Patterning System</td>
<td>P. Müller et al.</td>
<td>The inhibitor Leptf diffuses more widely than the activator Nodal.</td>
</tr>
<tr>
<td>724</td>
<td>Mechanical Control of Morphogenesis by Fat/Dachsous/Four-Jointed Planar Cell Polarity Pathway</td>
<td>F. Bosveld et al.</td>
<td>Polarized proto-cadherin and myosin induce an anisotropic tension at cell junctions and thereby shape epithelial tissue.</td>
</tr>
<tr>
<td>728</td>
<td>Structural Basis for DNA Damage-Dependent Poly(ADP-ribosyl)ation by Human PARP-1</td>
<td>M.-F. Langier et al.</td>
<td>An enzyme that binds to damaged DNA undergoes a structural reorganization that enhances its catalytic activity.</td>
</tr>
<tr>
<td>732</td>
<td>Meiosis-Specific Noncoding RNA Mediates Robust Pairing of Homologous Chromosomes in Meiosis</td>
<td>D.-Q. Ding et al.</td>
<td>An RNA transcript helps to bring together homologous chromosomes during cell division.</td>
</tr>
<tr>
<td>736</td>
<td>Epigenomic Enhancer Profiling Defines a Signature of Colon Cancer</td>
<td>B. Akhtar-Zaidi et al.</td>
<td>Methylation tags at long-distance gene regulatory elements provide a signature specific to cancer cells.</td>
</tr>
<tr>
<td>740</td>
<td>Recent Explosive Human Population Growth Has Resulted in an Excess of Rare Genetic Variants</td>
<td>A. Keinan and A. G. Clark</td>
<td>Genetic models that incorporate recent human population growth can better identify mutations in large samples.</td>
</tr>
<tr>
<td>744</td>
<td>Transcription-Independent Function of Polycomb Group Protein PSC in Cell Cycle Control</td>
<td>A. Mohd-Sarip et al.</td>
<td>A Polycomb group protein regulates the cell cycle by promoting cyclin B ubiquitylation and degradation.</td>
</tr>
</tbody>
</table>