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Science

Galaxy Evolution

 AAAS

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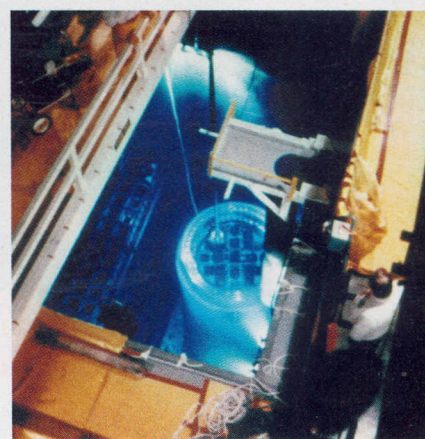
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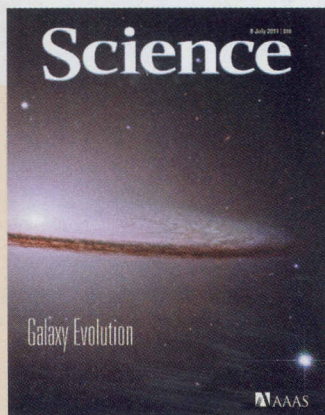
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Composite image of the Sombrero galaxy captured by the Hubble Space Telescope in 2003. Like the Milky Way, the Sombrero is a spiral galaxy with a central stellar bulge and a thin disk containing spiral arms of newly formed stars. The special section beginning on page 169 examines the ways in which galaxies change over time.

Image: NASA and The Hubble Heritage Team (Space Telescope Science Institute/Association of Universities for Research in Astronomy)

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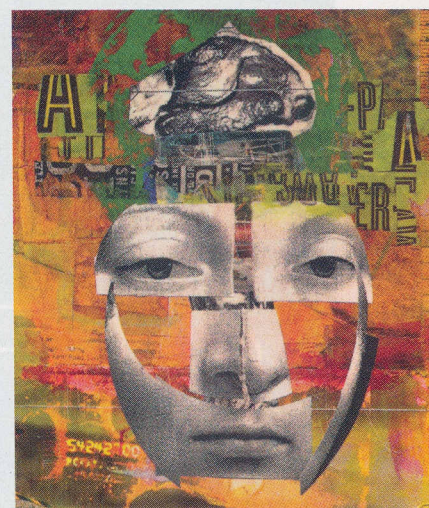
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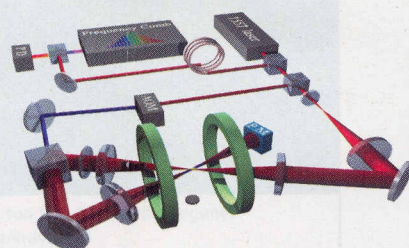
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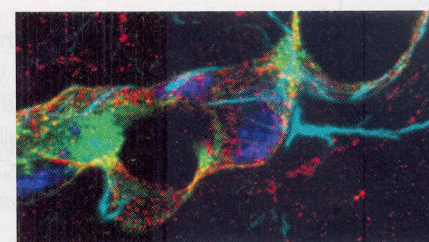
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Herschel Detects a Massive Dust Reservoir in Supernova 1987A

M. Matsuura et al.

The large amount of dust produced by this supernova may help explain the dust observed in young galaxies.

10.1126/science.1205983

CRASY: Mass- or Electron-Correlated Rotational Alignment Spectroscopy

C. Schröter et al.

A technique merging rotational spectroscopy with mass spectrometry facilitates analysis of a complex isotopic mixture.

10.1126/science.1204352

A Highly Conserved Neutralizing Epitope on Group 2 Influenza A Viruses

D. C. Ekiert et al.

An antibody against a conserved epitope broadly neutralizes group 2 influenza viruses.

10.1126/science.1204839

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Schema-Dependent Gene Activation and Memory Encoding in Neocortex

D. Tse et al.

New hippocampal-dependent learning is in parallel consolidated with existing memories in the neocortex.

10.1126/science.1205274

Drosophila Sex lethal Gene Initiates Female Development in Germline Progenitors

K. Hashiyama et al.

Primordial germ cells are directed toward oogenesis even before they migrate to the gonads of the fruit fly.

10.1126/science.1208146

High Value and Long Life—Double Jeopardy for Tunas and Billfishes

B. B. Collette et al.

10.1126/science.1208730

SCIENCENOW

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Highlights From Our Daily News Coverage

Magnetic Nanoparticles Fry Tumors

"Magnetic hyperthermia" proves more effective in mice than a traditional cancer drug.

http://scim.ag/_hyperthermia

Long-Dead Cane Toads Continue

to Haunt Australian Wildlife

Road-kill "toad jerky" is highly toxic, even after months in the Sun.

<http://scim.ag/cane-toads>

Chimps Are Good Listeners, Too

Like humans, chimps can pick out meaning even when the sounds of words are distorted, suggesting yet again that human language has roots in other species.

<http://scim.ag/chimp-listen>

SCIENCE SIGNALING

www.sciencesignaling.org

The Signal Transduction Knowledge Environment

5 July issue: <http://scim.ag/ss070511>

RESEARCH ARTICLE: Sequential Phosphorylation of Smoothened Transduces Graded Hedgehog Signaling

Y. Su et al.

It takes two kinases and two phosphatases acting on a single membrane protein Smoothened to interpret the Hedgehog morphogen gradient.

RESEARCH ARTICLE: Identification of a Lysosomal Pathway That Modulates Glucocorticoid Signaling and the Inflammatory Response

Y. He et al.

PODCAST

Y. He and A. M. VanHook

Inhibition of lysosome function promotes the anti-inflammatory effects of glucocorticoid signaling.

PERSPECTIVE: Bacterial Scaffolds Assemble Novel Higher-Order Complexes to Reengineer Eukaryotic Cell Processes

C. F. Lesser and J. M. Leong

Bacterial effector proteins can act as novel scaffolds for signaling proteins in infected mammalian cells.

SCIENCE TRANSLATIONAL MEDICINE

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Integrating Medicine and Science

6 July issue: <http://scim.ag/stm070611>

COMMENTARY: Reengineering Translational Science—The Time Is Right

F. S. Collins

The new National Center for Advancing Translational Sciences aims to revamp the process of biomedical research translation.

PERSPECTIVE: Development of Newborn and Infant Vaccines

G. Sanchez-Schmitz and O. Levy

Insights into immune ontogeny will inform translation of new vaccines that are safe and effective for newborns and infants.

RESEARCH ARTICLE: Optimization of Dosing for EGFR-Mutant Non-Small Cell Lung Cancer with Evolutionary Cancer Modeling

J. Chmielecki et al.

Predictive models of EGFR-mutant tumor behavior point to alternative drug dosing strategies to prevent and treat acquired resistance.

RESEARCH ARTICLE: CXCL5 Mediates UVB Irradiation-Induced Pain

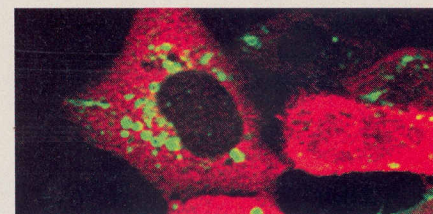
J. M. Dawes et al.

The cytokine CXCL5 is a peripheral mediator of pain induced by UVB irradiation to the skin.

RESEARCH ARTICLE: Deep Sequencing of the Human TCR γ and TCR β Repertoires Suggests That TCR β Rearranges After $\alpha\beta$ and $\gamma\delta$ T Cell Commitment

A. M. Sherwood et al.

Deep sequencing provides new insights about T cell receptor rearrangement in humans.



SCIENCE SIGNALING

Lysosomes regulate glucocorticoid signaling.

SCIENCE CAREERS

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A Nobel Prize-Winning Culture

V. Raper

Scientists at the MRC Laboratory of Molecular Biology attribute the lab's success to bold thinking, secure funding, and a collaborative culture.

http://scim.ag/mrc_lmb_nobel

A Farmer's Son Cultivates a Career in Translational Research

C. Wald

Molecular geneticist Robert Kravovics traces his character as a scientist to growing up as a farmer's son in a Communist regime.

<http://scim.ag/kravovics>

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On the 8 July *Science* Podcast: the cellular origin of spinal cord scar tissue, neutralizing influenza, the future of nuclear power in the U.S., and more.

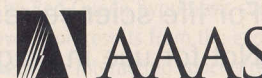
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Science Policy News and Analysis

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 © 2011 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$149 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$990; Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery) \$85. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Publications Mail Agreement Number 1069624. Printed in the U.S.A.

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