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I. Bozic and M. A. Nowak
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ON THE WEB THIS WEEK
>> Science Podcast
Listen to stories on the minimum requirements for a Y chromosome, the future of missile defense, details of an extraordinary gamma-ray burst, and more.
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COVER
Hit distribution (red, early; green, late) of a neutrino interaction with the Antarctic IceCube neutrino detector on 14 July 2011. Light from this transfer of 250 teraelectron volts of energy fills a sphere 600 meters across. This event, among the highest-energy neutrino interactions ever observed, forms part of the first evidence for a high-energy neutrino flux of astrophysical origin. See pages 920 and 947 and http://dx.doi.org/10.1126/science.1242856.
Credit: IceCube Collaboration
REPORTS

946 Constraints on the Late Holocene Imaging of a Circumsolar Dust Ring
M. H. Sieweke et al.
Research Article Summary; for full text:
http://dx.doi.org/10.1126/science.1242856

947 Evidence for High-Energy Extraterrestrial Neutrinos at the IceCube Detector
IceCube Collaboration
Research Article Summary; for full text:
http://dx.doi.org/10.1126/science.1242856

948 Organization of the Mitotic Chromosome
N. Naumova et al.
Chromosome conformation changes dramatically during the cell cycle and is unlikely to carry epigenetic information.
>> Perspective p. 940

RESEARCH ARTICLES

954 Observing the Dynamics of Dipole-Mediated Energy Transport by Interaction-Enhanced Imaging
G. Günter et al.
An imaging technique based on a cloud of cold atoms provides a model system to study the coherent transport of energy.
>> Perspective p. 942

956 Selective C-H Fluorination of Pyridines and Diazines Inspired by a Classic Amination Reaction
P. S. Fier and J. F. Hartwig
A mild fluorination method could help produce compounds of interest in medicinal research.

960 Imaging of a Circumsolar Dust Ring Near the Orbit of Venus
M. H. Jones et al.
Imaging data from the STEREO mission indicate the presence of a dust ring around Venus.

964 Constraints on the Late Holocene Anthropogenic Contribution to the Atmospheric Methane Budget
L. Mitchell et al.
Records derived from polar ice cores provide constraints on methane emissions during the late preindustrial Holocene.
>> News story p. 918

967 Commensal Bacteria Control Cancer Response to Therapy by Modulating the Tumor Microenvironment
N. Iida et al.

971 The Intestinal Microbiota Modulates the Anticancer Immune Effects of Cyclophosphamide
S. Viaud et al.
The gut microbiota promote the efficacy of several antineoplastic agents in mice.
>> News story p. 921

976 Substitutions Near the Receptor Binding Site Determine Major Antigenic Change During Influenza Virus Evolution
B. F. Koel et al.
The major antigenic changes of the influenza virus are primarily caused by a single amino acid near the receptor binding site.

979 Yeast Reveal a "Druggable" Rsp5/Nedd4 Network that Ameliorates α-Synuclein Toxicity in Neurons
D. F. Tardiff et al.

983 Identification and Rescue of α-Synuclein Toxicity in Parkinson Patient-Derived Neurons
C. Y. Chang et al.
Screening in yeast yields an effective therapeutic for Parkinson's patient-derived neuronal stem cells.

987 The Human Language-Associated Gene SRPX2 Regulates Synapse Formation and Vocalization in Mice
G. M. Sia et al.
Studies in mice and rats elucidate the function of a protein encoded by a gene that affects language.
>> Perspective p. 944

991 Evidence that the Fosfomycin-Producing Epoxidase, HppE, Is a Non–Heme-Iron Peroxidase
C. Wang et al.
An iron enzyme previously thought to use O$_2$ as an oxidant appears to use peroxide instead.
>> Perspective p. 943

995 Defining Stem Cell Dynamics in Models of Intestinal Tumor Initiation
L. Vermeulen et al.
Common genetic alterations during tumor initiation in the mouse gut reveal clonal advantages.
>> Perspective p. 938