



## COVER

Like a cauliflower, the quantum critical regime has the same appearance irrespective of viewing distance. Fluctuations prevent a stable phase from developing; instead a patchwork of mixed phases arises. See the special section on quantum matter beginning on page 1201.

*Image: Getty Images*

## DEPARTMENTS

- 1155 Science Online
- 1157 This Week in *Science*
- 1162 Editors' Choice
- 1164 Contact *Science*
- 1165 Random Samples
- 1167 Newsmakers
- 1200 AAAS News & Notes
- 1268 New Products
- 1269 Science Careers

## EDITORIAL

- 1161 On the Way Out  
by Donald Kennedy  
>>Perspective p. 1199

## SPECIAL SECTION

# Quantum Matter

## INTRODUCTION

Quantum Wonderland 1201

## PERSPECTIVES

Quantum Gases 1202  
*I. Bloch*

Quantum Liquids 1203  
*A. J. Leggett*

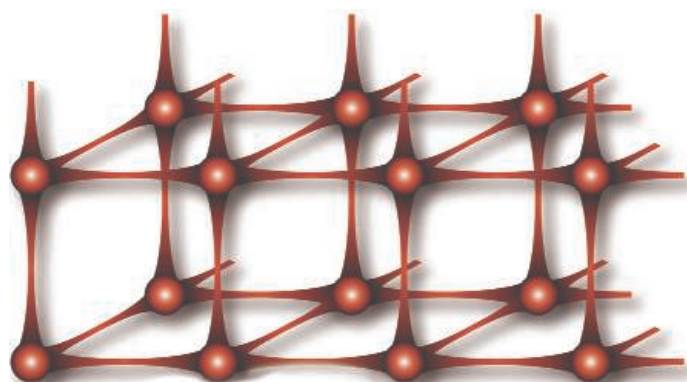
Quantum Critical Electron Systems: The Uncharted Sign Worlds 1205  
*J. Zaanen*

Supersolidity 1207  
*M. H. W. Chan*

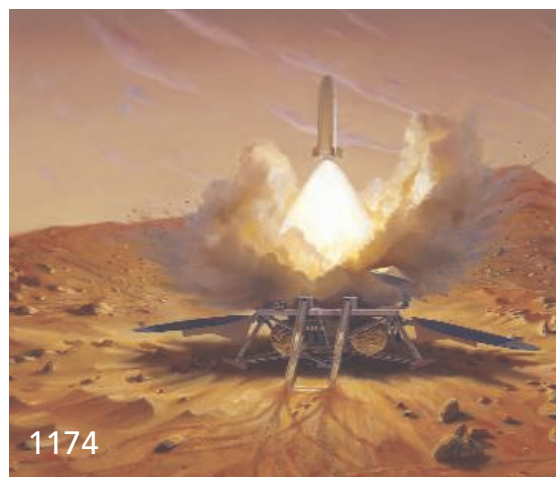
Quantum Information Matters 1209  
*S. Lloyd*

Looking to the Future of Quantum Optics 1211  
*I. A. Walmsley*

>> *News Focus* article p. 1180



1211



## NEWS OF THE WEEK

- Florida Standards Support Evolution—With a Twist 1168
- NIH Urged to Focus on New Ideas, New Applicants 1169
- New Prize Sends Old Hands on Flights of Lunar Discovery 1170

Chemist Found Responsible for Ethical Breaches 1170

## SCIENCESCOPE 1171

Annette Schavan Interview: German Science Takes an International View 1172

Philip Morris Pulls the Plug on Controversial Research Program 1173

## NEWS FOCUS

War of the Worlds? 1174

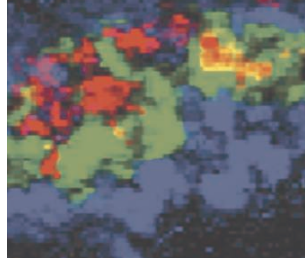
Are Epigeneticists Ready for Big Science? 1177

Flu Virus Research Yields Results but No Magic Bullet for Pandemic 1178

Insights Flow From Ultracold Atoms That Mimic Superconductors >> *Quantum Matter* section p. 1201 1180

Rocking the Cradle of Humanity 1182

CONTENTS continued >>>



## SCIENCE EXPRESS

www.scienceexpress.org

### CLIMATE CHANGE

**Covariant Glacial-Interglacial Dust Fluxes in the Equatorial Pacific and Antarctica**

*G. Winckler, R. F. Anderson, M. Q. Fleisher, D. McGee, N. Mahowald*  
A 500,000-year record shows that more dust, which provides iron and other nutrients, was blown into the equatorial Pacific during glacial periods than during warm periods.  
10.1126/science.1150595

### GEOCHEMISTRY

**Graphite Whiskers in CV3 Meteorites**

*M. Fries and A. Steele*  
Graphite whiskers, a naturally occurring allotrope of carbon, have been found in primitive grains in several meteorites and may explain spectral features of supernovae.  
10.1126/science.1153578

### MEDICINE

**TDP-43 Mutations in Familial and Sporadic Amyotrophic Lateral Sclerosis**  
*J. Sreedharan et al.*

Mutations in a gene that encodes a protein that aggregates in several neurodegenerative disorders are linked to amyotrophic lateral sclerosis (Lou Gehrig's disease).  
10.1126/science.1154584

### NEUROSCIENCE

**Protein Synthesis and Neurotrophin-Dependent Structural Plasticity of Single Dendritic Spines**

*J. Tanaka et al.*  
Pairing of stimuli in hippocampal cells induces secretion of the growth factor BDNF, causing enlargement of individual spines and strengthening of synapses.  
10.1126/science.1152864

## LETTERS

**The Need to Cut China's Illegal Timber Imports** 1184

*W. F. Laurance* Response *G. Wang et al.*

**Minding Controls in Curriculum Study** *J. Mercer*  
Response *A. Diamond*

## BOOKS ET AL.

**How and Why Species Multiply** 1187

The Radiation of Darwin's Finches  
*P. R. Grant and B. R. Grant*, reviewed by *H. Kokko*

**The Telephone Gambit** 1188

Chasing Alexander Graham Bell's Secret  
*S. Shulman*, reviewed by *D. L. Morton Jr.*

## EDUCATION FORUM

**Integrating Content Detail and Critical Reasoning** 1189

by Peer Review  
*R. Iyengar et al.*

## PERSPECTIVES

**No ESCRTs for Exosomes** 1191

*M. Marsh and G. van Meer* >> Report p. 1244

**New Materials at a Glance** 1192

*M. J. Brett and M. M. Hawkeye*

**Complexity in Fusion Plasmas** 1193

*P. A. Norreys* >> Report p. 1223

**An Enlightening Structure-Function Relationship** 1195

*B. A. Armitage and P. B. Berger* >> Report p. 1232

**Reconstruction of the Genomes** 1196

*D. Endy* >> Research Article p. 1215

**Getting Specific About Specific Ion Effects** 1197

*D. J. Tobias and J. C. Hemminger*

**Bruce Alberts, Science's New Editor** 1199

*M. Kirschner* >> Editorial p. 1161

## BREVIA

### ATMOSPHERIC SCIENCE

**Ubiquity of Biological Ice Nucleators in Snowfall** 1214

*B. C. Christner et al.*

Biogenic aerosols are ubiquitous in nuclei of ice particles that grow and form snowflakes, and thus may influence the precipitation cycle.

## RESEARCH ARTICLE

### GENETICS

**Complete Chemical Synthesis, Assembly, and Cloning of a *Mycoplasma genitalium* Genome** 1215

*D. G. Gibson et al.*

A complete bacterial genome is synthesized, assembled, and cloned, providing a method that will be useful for generating large DNA molecules de novo. >> Perspective p. 1196

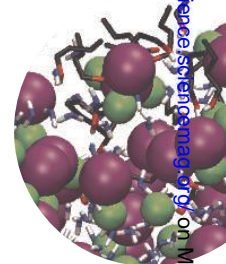
## REPORTS

### ASTROPHYSICS

**Asphericity in Supernova Explosions from Late-Time Spectroscopy** 1220

*K. Maeda et al.*

Spectroscopic signatures show that supernova explosions of stars that have lost their hydrogen envelopes are strongly aspherical and may be jetlike.



1197

Downloaded from http://science.sciencemag.org/ on May 23, 2019



1191 & 1244

CONTENTS continued >>

## REPORTS CONTINUED...

## PHYSICS

## Proton Radiography of Inertial Fusion Implosions 1223

J. R. Rygg et al.

Beams of protons used to map laser fusion targets as they implode reveal the generation of long plasma filaments and a strong radial electric field. >> *Perspective p. 1193*

## PHYSICS

## Long-Range Order in Electronic Transport Through Disordered Metal Films 1226

S. Aigner et al.

At ultracold temperatures, magnetometry suggests that defects in a gold wire produce organized, long-range electron deflections oriented at 45° to the direction of current flow.

## MATERIALS SCIENCE

## Chemically Derived, Ultrasoft Graphene Nanoribbon Semiconductors 1229

X. Li, X. Wang, L. Zhang, S. Lee, H. Dai

Unlike nanotubes, 10-nanometer-wide graphene nanoribbons have smooth edges and can act as semiconductors.

## CHEMISTRY

## Deeply Inverted Electron-Hole Recombination in a Luminescent Antibody-Stilbene Complex 1232

E. W. Debler et al.

The bright blue emission from a stilbene-antibody complex, a versatile biosensor, is not fluorescence, but arises from charge recombination between a stilbene anion and a cationic side chain.

>> *Perspective p. 1195*

## CLIMATE CHANGE

## Land Clearing and the Biofuel Carbon Debt 1235

J. Fargione, J. Hill, D. Tilman, S. Polasky, P. Hawthorne

## Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land-Use Change 1238

T. Searchinger et al.

Converting forests and grasslands to biofuels crop production results in a net carbon flux to the atmosphere for decades despite any displacement of fossil fuel use.

## CELL BIOLOGY

## Local Positive Feedback Regulation Determines Cell Shape in Root Hair Cells 1241

S. Takeda, C. Gapper, H. Kaya, E. Bell, K. Kuchitsu, L. Dolan

Accumulation of an oxidase enzyme at one end of *Arabidopsis* root hair cells generates reactive oxygen species, which in turn trigger calcium entry and directional growth.

## CELL BIOLOGY

## Ceramide Triggers Budding of Exosome Vesicles into Multivesicular Endosomes 1244

K. Trajkovic et al.

Endosomes, membrane-bound vesicles later released from cells, are filled by a lipid-controlled budding of certain membrane regions into the lumen. >> *Perspective p. 1191*

## 1193 &amp; 1223

## CELL BIOLOGY

## Membrane Proteins of the Endoplasmic Reticulum Induce High-Curvature Tubules 1247

J. Hu et al.

Integral membrane proteins from the endoplasmic reticulum induce the development of tubular structures in vitro by forming oligomers in the plane of the membrane.

## PHYSIOLOGY

## Leading-Edge Vortex Improves Lift in Slow-Flying Bats 1250

F. T. Muijres et al.

Flying bats generate high lift forces similar to those used by insects, creating a vortex of air that stays attached to the wing on the downward stroke.

## NEUROSCIENCE

## Synaptic Protein Degradation Underlies Destabilization of Retrieved Fear Memory 1253

S.-H. Lee et al.

Upon recollection, mouse memories of fearful situations become labile, as postsynaptic proteins are degraded by proteasomes and are then reconsolidated via protein synthesis.

## NEUROSCIENCE

Hybrid Neurons in a MicroRNA Mutant Are Putative Evolutionary Intermediates in Insect CO<sub>2</sub> Sensory Systems 1256

P. Cayirlioglu et al.

Loss of a microRNA in *Drosophila* leads to misexpression of CO<sub>2</sub>-sensing neurons in the mouthparts, creating a possible evolutionary hybrid between the fruit fly and mosquito.

## NEUROSCIENCE

## Transgenic Inhibition of Synaptic Transmission Reveals Role of CA3 Output in Hippocampal Learning 1260

T. Nakashiba et al.

Blockade of neural activity in the CA3 region of the hippocampus with a reversible, inducible transgenic method inhibits rapid learning but spares certain spatial tasks.

## PSYCHOLOGY

## BOLD Responses Reflecting Dopaminergic Signals in the Human Ventral Tegmental Area 1264

K. D'Ardenne, S. M. McClure, L. E. Nystrom, J. D. Cohen

In humans, activity measurements in a small midbrain region show that resident dopamine-containing neurons accurately predict rewards in a learning task.



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CONTENTS continued &gt;&gt;



Bigger amygdalas in aggressive teens.

## SCIENCE NOW

[www.sciencenow.org](http://www.sciencenow.org) DAILY NEWS COVERAGE

### Teen Aggressiveness in the Brain

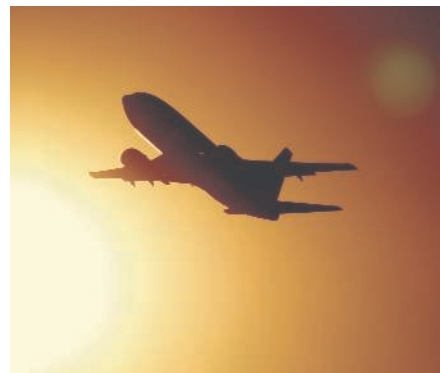
Tough-to-handle adolescents share bigger amygdala.

### New Map for Malaria

Disease prevalence lower than thought.

### Giving Earth an Umbrella

Computer models show how releasing clouds of fine particles could cool the planet.



Jetting to one more faculty interview.

## SCIENCE CAREERS

[www.sciencereers.org](http://www.sciencereers.org) CAREER RESOURCES FOR SCIENTISTS

### Research in Translation: Getting Published

*S. Carpenter*

Careful planning and choosing the right journal are key in publishing translational research.

### In Person: Frequent Flyer

*A. McNeil*

Faculty interviews come with tight scheduling, awkward questions, and jet lag.

### Educated Woman, Postdoc Edition, Chapter 13:

Fake It Until You Make It?

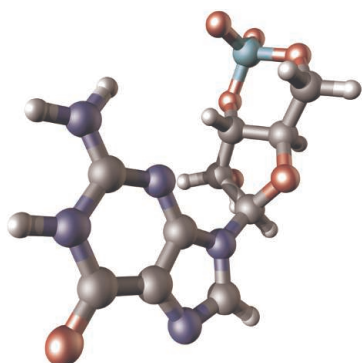
*M. P. DeWhyse*

Can Micella regain confidence in her abilities for her interview?

### From the Archives: Disasters of the Famous

*K. Arney*

Prominent scientists' stories of lab errors remind us that everyone makes mistakes.



cGMP is a therapeutic target.

## SCIENCE SIGNALING

[www.stke.org](http://www.stke.org) THE SIGNAL TRANSDUCTION KNOWLEDGE ENVIRONMENT

### MEETING REPORT: cGMP Matters

*B. Kemp-Harper and R. Feil*

Emerging therapies for treating cardiovascular disorders target the cGMP signaling system.

### TEACHING RESOURCE: Using Web-Based Discussion Forums as a Model of the Peer-Review Process and a Tool for Assessment

*S. L. Jenkins, R. Iyengar, M. A. Diverse-Pierluissi, A. M. Chan, L. A. Devi, E. A. Sobie, A. T. Ting, D. C. Weinstein*

Asynchronous discussion forums have several advantages over in-class journal club discussions.



## SCIENCE PODCAST

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