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

**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

**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**

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

Rocking the Cradle of Humanity 1182

CONTENTS continued >>
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
W. F. Laurance
Response G. Wang et al.
1184

Minding Controls in Curriculum Study
J. Mercer
Response A. Diamond
1185

BOOKS ET AL.
How and Why Species Multiply
The Radiation of Darwin’s Finches
P. R. Grant and B. R. Grant, reviewed by H. Kokko
1187

The Telephone Gambit
Chasing Alexander Graham Bell’s Secret
S. Shulman, reviewed by D. L. Morton Jr.
1188

EDUCATION FORUM
Integrating Content Detail and Critical Reasoning
by Peer Review
R. Iyengar et al.
1189

PERSPECTIVES
No ESCRTs for Exosomes
M. Marsh and G. van Meer
1191

New Materials at a Glance
M. J. Brett and M. M. Hawkeye
1192

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

ASTROPHYSICS
Asphericity in Supernova Explosions from Late-Time Spectroscopy
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.
1220
Sensory leads to misexpression of...
Bigger amygdalas in aggressive teens.

SCIENCE NOW
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.

cGMP is a therapeutic target.

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

Jetting to one more faculty interview.

SCIENCE CAREERS
www.sciencecareers.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.

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.

Separate individual or institutional subscriptions to these products may be required for full-text access.
Editor's Summary

This copy is for your personal, non-commercial use only.

**Article Tools**  Visit the online version of this article to access the personalization and article tools:  http://science.sciencemag.org/content/319/5867

**Permissions**  Obtain information about reproducing this article:  http://www.sciencemag.org/about/permissions.dtl