

ART	Article	BR	Book review	BS	Back scatter	FOR	Readers' forum
IE	Issues & events	NN	News notes	OB	Obituaries	QS	Quick study
		SD	Search & discovery	UP	Physics update		

SUBJECT INDEX P. 84

BOOKS REVIEWED P. 92

AUTHOR INDEX P. 93

Subject index

Accelerators

See Department of Energy; Facilities and laboratories; Nuclear physics; Particle physics

Acoustical Society of America

See Scientific societies

Acoustics

Microphones step up to the plate (UP) JAN 16
Toward imaging the brain's tiniest arteries (UP) JAN 16
Tasting music like wine: Sensory evaluation of concert halls, T. Lokki (ART) JAN 27
Phonon spectrometry goes nanoscale (SD) FEB 16
Diagnosing malaria using light and sound (UP) MAR 20
Binaural hearing for the hearing-impaired (UP) MAR 21
Seeing voices: Imaging the earliest sound recordings, C. Haber (QS) MAR 68
Metamaterials twist sound (UP) APR 20
Evaluating musical instruments, D. M. Campbell (ART) APR 35
A three-dimensional acoustic invisibility cloak (BS) APR 72
Our spatial sense of pitch (UP) JUN 22
The sound of the slurry (UP) SEP 17
A new era of nuclear test verification, M. Auer, M. K. Prior (ART) SEP 39
Bell tones from the piano, J. Orloff; M. Campbell (FOR) OCT 10
Musical pitch perception starts early (SD) OCT 18
From the archives: Design for acoustics, L. L. Beranek (ART) DEC 52

American Association of Physicists in Medicine

See Scientific societies

American Association of Physics Teachers

See Scientific societies

American Astronomical Society

See Scientific societies

American Crystallographic Association

See Scientific societies

American Institute of Physics

See Scientific societies

American Meteorological Society

See Scientific societies

American Physical Society

See Scientific societies

Arms control

See Military physics and arms control

Asia

See also International science
Taiwan's science miracle, T. Feder (ART) MAR 45; *correction* MAY 9
Particle physicists brainstorm long-term collider options (IE) JUL 23
From Beijing to Kigali, ICTP makes itself at home in the developing world (IE) OCT 20
Space, nuclear trade eyed at US-India summit (IE) NOV 29
Prisoner of conscience to get retrial in Iran (IE) DEC 30

Astronomy and astrophysics

See also Cosmology and general relativity; Space and planetary science
A lesson in defining "extinct," P. Asimow (FOR) JAN 8
The search for magnetic reconnection in solar flares, P. Foukal (FOR) JAN 8
The DOE might prefer a living planet, B. Zuckerman (FOR) JAN 9
Earth-size exoplanets in habitable orbits are common (SD) JAN 10
Commentary: Flattening the astronomy world, M. Mountain (FOR) FEB 8
A close-up look at an unusually powerful gamma-ray burst (SD) FEB 13
Baryon acoustic oscillation (UP) MAR 20
Warm planets orbiting cool stars, J. A. Johnson (ART) MAR 31
A brown-dwarf weather map (BS) MAR 76
Probing the accelerating universe, J. Frieman (ART) APR 28; *correction* JUL 9
Early sightings of comets near the Sun, J. M. Vaquero (FOR) MAY 9
Polarization measurement detects primordial gravitational waves (SD) MAY 11
The tidal disruption of stars by supermassive black holes, S. Gezari (ART) MAY 37
Early history of Arecibo Observatory, P. H. Carr; R. M. Dowe Jr; D. Altschuler, C. Salter (FOR) JUN 11
Thermal cycling breaks down asteroid boulders (SD) JUN 16
Pulsed-power machine studies weapons, simulates stars (IE) JUN 24
Historical notes on the expanding universe, M. Way, A. Belenkiy, H. Nussbaumer, J. Peacock; M. Livio, A. Riess (FOR) JUL 8
Circularly polarized light from a gamma-ray burst (UP) JUL 16
Why do active galactic nuclei differ? (UP) JUL 17
Giant gamma-ray bubbles in the Milky Way, A. Frackowiak, S. Funk (QS) JUL 60
Model dynamo may solve Mercury mystery (SD) AUG 14
Canada CHIMES in on dark energy (IE) AUG 23
Germany to exit the SKA (IE) AUG 25
Extremely energetic cosmic rays from a preferred direction (UP) SEP 16
The most distant stars in our galaxy (UP) SEP 17
Chelyabinsk: Portrait of an asteroid airburst, D. A. Kring, M. Boslough (ART) SEP 32
Mapping the mass of a galaxy cluster (BS) SEP 72
Energetic flares in the search for habitable exoplanets, R. Mielbrecht; J. A. Johnson (FOR) OCT 10
Captured cosmic dust may have interstellar origins (SD) OCT 12; *correction* NOV 10
New telescope in Turkey (IE) OCT 26
Scintillator yields glimpse of elusive solar neutrinos (SD) NOV 12
Europa may host a system of tectonic plates (SD) NOV 14
Squeezing quantum noise, S. Dwyer (QS) NOV 72
Commentary: BICEP2's B modes: Big Bang or dust? M. Livio, M. Kamionkowski (FOR) DEC 8
Hawking radiation from fluids (UP) DEC 23
The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

Atmospheric science

See also Earth science; Environment; Ocean science; Space and planetary science
Proposed sea vessel offers science on the drift (IE) JAN 23
A model atmosphere (BS) JAN 72
Many planets, similar tropopauses (UP) FEB 18
A nanoscale look at how soil captures carbon (SD) MAR 14
Whipping up sand dunes from scratch (SD) MAR 19
Geoscientists seek to save HAARP (IE) APR 22
Atmospheric research heats up at Arecibo (IE) APR 24
Dynamics of a skydiver's epic free fall, J. M. Colino, A. J. Barbero, F. J. Tapiador (QS) APR 64
Role of black carbon in the Arctic's new normal, S. G. Warren; M. Jeffries, J. Overland, D. Perovich (FOR) MAY 8
Fewer large waves for eastern Australia (UP) MAY 17
Early history of Arecibo Observatory, P. H. Carr; R. M. Dowe Jr; D. Altschuler, C. Salter (FOR) JUN 11
The art and science of forensic meteorology, E. Austin, P. Hildebrand (ART) JUN 32
From the archives: Analyzing atmospheric behavior, H. Panofsky (ART) JUN 38
The Antarctic ozone hole: An update, A. R. Douglass, P. A. Newman, S. Solomon (ART) JUL 42
Extreme weather to increase around Indian Ocean (UP) AUG 19
Scientists, White House say ocean acidification is well under way (IE) AUG 20
HAARP reprieve (NN) AUG 25
What we know and don't know about tornado formation, P. Markowski, Y. Richardson (ART) SEP 26
A new era of nuclear test verification, M. Auer, M. K. Prior (ART) SEP 39
DOE acquiring new supercomputers and climate models (IE) OCT 27
Emergent aerodynamics in wind farms, J. O. Dabiri (QS) OCT 66
Shock waves and history in free fall, A. M. Gañán-Calvo; A. Spero; D. Wright; J. M. Colino, A. J. Barbero, F. J. Tapiador (FOR) NOV 9
Imaging Earth daily to help humanity (IE) NOV 27
The changing width of Earth's tropical belt, T. Birner, S. M. Davis, D. J. Seidel (ART) DEC 38

Atomic physics

See also Chemical and molecular physics; Nuclear physics; Quantum physics
Bohr's molecular model, a century later, A. Svidzinsky, M. Scully, D. Herschbach (ART) JAN 33
Optical-lattice clock sets new standard for timekeeping (SD) MAR 12
De Broglie's meter stick: Making measurements with matter waves, M. Arndt (ART) MAY 30
Bohr's molecular model and the melding of classical and quantum mechanics, M. Y. Amusia; L. Mlodinow; P. Grujic; A. Svidzinsky, M. Scully, D. Herschbach (FOR) AUG 8
Confirming antihydrogen neutrality with voltage bias (UP) AUG 18
A quantum switch routes photons one by one (SD) SEP 15
Walking a silicon atom through a graphene landscape (UP) SEP 16
DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23
Atom-like crystal defects: From quantum computers to biological sensors, L. Childress, R. Walsworth, M. Lukin (ART) OCT 38
Graphene's newest cousin, germanene (UP) NOV 20

AVS

See Scientific societies

Awards

Nobel Prize in Physics recognizes research leading to high-brightness blue LEDs (SD) DEC 14
Chemistry Nobel honors developers of superresolution microscopy (SD) DEC 18

Biography and personalities

See also History and philosophy; Obituaries
Paul Ehrenfest's final years, D. van Delft (ART) JAN 41
Revolutionary physics in reactionary Argentina, W. Bietenholz, L. Prado (ART) FEB 38
Organic thin films: From monolayers on liquids to multilayers on solids, J. E. Greene (ART) JUN 43
The weight of water, P. Cavagnero, R. Revelli (ART) AUG 41
Out of Ehrenfest's closet, A. Yelon (FOR) SEP 9

Biological physics

See also Crystallography; Medical physics
En route to an amyloid fibril (UP) JAN 15
Toward imaging the brain's tiniest arteries (UP) JAN 16
US output of critical medical isotope to begin this year (IE) JAN 24
A new angle on complex dynamics (SD) FEB 17
Picturing the organization of mitotic chromosomes (UP) FEB 18
Capturing the chaos of running (UP) FEB 19
Circulating tumor cells: Cancer's deadly couriers, C. T. Lim, D. S. B. Hoon (ART) FEB 26
Bacterial decision making, J. Kondev (ART) FEB 31
Notes on teaching physics to biologists, W. John; P. Murugesan; M. Rorvig; D. Meredith, J. Redish (FOR) APR 12
A fruit-fly gene network may be tuned to a critical point (SD) APR 19
Mimicking microcapillaries (UP) APR 21
Mimicking cell mechanics (BS) MAY 76
Precision trapping on a microfluidic chip (UP) JUN 21
Frog eyes show prowess as quantum sensors (SD) JUL 16
Modeling a cell in an external electric field, F. X. Hart (FOR) OCT 11
Atom-like crystal defects: From quantum computers to biological sensors, L. Childress, R. Walsworth, M. Lukin (ART) OCT 38
Polarized electrons see mirrored molecules differently (UP) NOV 19
UV light and peptides hit a triplet (UP) NOV 19
Physicists offer a different approach to cancer research (IE) NOV 22
Where bone meets implant (BS) NOV 96
Modeling a virus atom by atom (SD) DEC 21
Watching nematodes swim the channel (UP) DEC 22
Reversed diffraction in bio-inspired photonic materials (UP) DEC 23

Books

See separate BOOKS REVIEWED index (page 92); Publishing, media, and the press

Bose-Einstein condensation

See Atomic physics; Condensed-matter physics; Quantum physics

Budgets

See Funding and budgets

Careers

See Employment and careers

Chaos

See Nonlinear science

Chemical and molecular physics

See also Atomic physics; Materials science; Quantum physics
Nuclear magnetic resonance takes a reaction's temperature (SD) JAN 12
When paintings go bad (UP) JAN 16
Bohr's molecular model, a century later, A. Svidzinsky, M. Scully, D. Herschbach (ART) JAN 33

A nanoscale look at how soil captures carbon (SD) MAR 14
Nonlinear microscopy looks beneath the surface of historic artwork (SD) APR 17
Liquid chemicals and fuels from natural gas (UP) MAY 17; *correction* JUL 9
A new kind of self-assembled monolayer (SD) JUN 20
Organic thin films: From monolayers on liquids to multilayers on solids, J. E. Greene (ART) JUN 43
What's in that bottle? M. Espy, J. Hunter, L. Schultz (QS) JUN 62
Visualizing many-body dynamics (BS) JUN 68
Isotopes tell the story of lead in ancient Rome (SD) JUL 14
The Antarctic ozone hole: An update, A. R. Douglass, P. A. Newman, S. Solomon (ART) JUL 42
Bohr's molecular model and the melding of classical and quantum mechanics, M. Y. Amusia; L. Mlodinow; P. Grujic; A. Svidzinsky, M. Scully, D. Herschbach (FOR) AUG 8
Model dynamo may solve Mercury mystery (SD) AUG 14
Charged polymers form unusual nanostructures (SD) AUG 16
The influence of liquid flow on interfacial chemistry (UP) AUG 18
3D printing, inspired by wood (BS) AUG 68
Modeling a cell in an external electric field, F. X. Hart (FOR) OCT 11
Tailor-made molecules grow into identical carbon nanotubes (SD) OCT 14
Zinc ore catalyzes Earth's organic chemistry (UP) OCT 18
Polarized electrons see mirrored molecules differently (UP) NOV 19
UV light and peptides hit a triplet (UP) NOV 19
Chemistry Nobel honors developers of superresolution microscopy (SD) DEC 18
Modeling a virus atom by atom (SD) DEC 21

China

See Asia; International science

Classical mechanics and electromagnetism

See also Statistical physics and thermodynamics
A new twist on the Doppler shift, M. Padgett (QS) FEB 58; *correction* JUL 9
Understanding *qi-wa*, the curling of scrolled artwork (UP) MAR 21
Dynamics of a skydiver's epic free fall, J. M. Colino, A. J. Barbero, F. J. Tapiador (QS) APR 64
Filtering light by angle (UP) MAY 16
The magnetic hose (UP) JUL 17
The search for Newton's constant, C. Speake, T. Quinn (ART) JUL 27
Shock waves and history in free fall, A. M. Gañán-Calvo; A. Spero; D. Wright; J. M. Colino, A. J. Barbero, F. J. Tapiador (FOR) NOV 9
Collaboration unlocks self-replicating crack patterns (SD) NOV 18
Cracking mud, freezing dirt, and breaking rocks, L. Goehring, S. W. Morris (ART) NOV 39
The conceptual origins of Maxwell's equations and gauge theory, C. N. Yang (ART) NOV 45
The Orange Wave (BS) DEC 96

Climate change

See Atmospheric science; Earth science; Environment

Collective effects

See Emergent phenomena

Complexity

See Emergent phenomena; Nonlinear science; Theory and mathematical physics

Computers and computational physics

See also Nonlinear science; Technology and engineering; Theory and mathematical physics
When paintings go bad (UP) JAN 16

A model atmosphere (BS) JAN 72
Mimicking cell mechanics (BS) MAY 76
Computers that are normally off (UP) JUN 22
Visualizing many-body dynamics (BS) JUN 68
Trouble lies ahead for Antarctic ice (SD) JUL 10
The Antarctic ozone hole: An update, A. R. Douglass, P. A. Newman, S. Solomon (ART) JUL 42
Charged polymers form unusual nanostructures (SD) AUG 16
Heat under the microscope, I. Maasilta, A. J. Minnich (ART) AUG 27
White House offers encouragement for cyberphysical systems (IE) SEP 20
DOE acquiring new supercomputers and climate models (IE) OCT 27
Modeling a virus atom by atom (SD) DEC 21
Big data goes high-speed across the Atlantic (IE) DEC 29

Condensed-matter physics

See also Crystallography; Fluids; Materials science; Microstructures and nanostructures; Rheology
A phase-change alloy that crystallizes without shrinking (UP) FEB 19
Grid-scale battery research flows with ARPA-E support (IE) APR 24
Unusual defect physics underlies perovskite solar cells' exceptional performance (SD) MAY 13
Better superconducting wires (UP) MAY 17
Minerals and meteorites: Searching for new superconductors (IE) MAY 20
Simple compound manifests record-high thermoelectric performance (SD) JUN 14
A new kind of self-assembled monolayer (SD) JUN 20
Computers that are normally off (UP) JUN 22
What's in that bottle? M. Espy, J. Hunter, L. Schultz (QS) JUN 62
Tailor-made surface swaps light polarization (UP) AUG 18
Bringing out the flex in flexoelectrics (UP) AUG 19
Heat under the microscope, I. Maasilta, A. J. Minnich (ART) AUG 27
Walking a silicon atom through a graphene landscape (UP) SEP 16
Quantum electrodynamics in a semiconductor vacuum (UP) OCT 18
Atom-like crystal defects: From quantum computers to biological sensors, L. Childress, R. Walsworth, M. Lukin (ART) OCT 38
Quantized vortices in a nanodroplet (SD) NOV 16
Collaboration unlocks self-replicating crack patterns (SD) NOV 18
Graphene's newest cousin, germanene (UP) NOV 20
Nobel Prize in Physics recognizes research leading to high-brightness blue LEDs (SD) DEC 14
Spontaneous fluctuations in a ferromagnetic film (UP) DEC 22
Hawking radiation from fluids (UP) DEC 23

Cosmology and general relativity

See also Astronomy and astrophysics; Particle physics; Theory and mathematical physics
Baryon acoustic oscillation (UP) MAR 20
Time, laws, and the future of cosmology, L. Smolin (ART) MAR 38
Probing the accelerating universe, J. Frieman (ART) APR 28; *correction* JUL 9
Polarization measurement detects primordial gravitational waves (SD) MAY 11
A final note on the existence of event horizons, G. Chhapline; S. B. Giddings (FOR) JUN 10
Early history of Arecibo Observatory, P. H. Carr; R. M. Dowe Jr; D. Altschuler, C. Salter (FOR) JUN 11
Historical notes on the expanding universe, M. Way, A. Belenkiy, H. Nussbaumer, J. Peacock; M. Livio, A. Riess (FOR) JUL 8
Canada CHIMES in on dark energy (IE) AUG 23
Extremely energetic cosmic rays from a preferred direction (UP) SEP 16
Dark-matter searches (NN) SEP 25
Mapping the mass of a galaxy cluster (BS) SEP 72
Black holes in cosmological natural selection, P. Sorensen; J. Winkler; L. Smolin (FOR) OCT 8

Captured cosmic dust may have interstellar origins (SD) OCT 12; *correction* NOV 10
Squeezing quantum noise, S. Dwyer (QS) NOV 72
Commentary: BICEP2's *B* modes: Big Bang or dust? M. Livio, M. Kamionkowski (FOR) DEC 8
The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

Cryogenics

See Instrumentation and techniques; Quantum physics

Crystallography

See also Biological physics; Condensed-matter physics; Medical physics
A phase-change alloy that crystallizes without shrinking (UP) FEB 19
Unusual defect physics underlies perovskite solar cells' exceptional performance (SD) MAY 13
Nanoscale ordering from bulk processing (SD) MAY 15
Better superconducting wires (UP) MAY 17
Simple compound manifests record-high thermoelectric performance (SD) JUN 14
Ultrafast electron diffraction from an ultracold source (SD) JUL 12
A battery material charges via an unexpected mechanism (SD) SEP 11
Walking a silicon atom through a graphene landscape (UP) SEP 16
Graphene's newest cousin, germanene (UP) NOV 20

Department of Defense

See Funding and budgets; Military physics and arms control; Science policy and politics

Department of Energy

See also Energy; Facilities and laboratories; Funding and budgets; Science policy and politics
US output of critical medical isotope to begin this year (IE) JAN 24
US taking a hard look at its involvement in ITER (IE) FEB 20
Nuclear weapons costs detailed (NN) FEB 24
Finally, some solid numbers for federal science budgets (IE) MAR 28
Grid-scale battery research flows with ARPA-E support (IE) APR 24
ARPA-E, a success by some measures, remains fragile (IE) APR 26
Livermore ends LIFE (IE) APR 26; *correction* MAY 9
At DOE, nonproliferation sinks despite its success (IE) MAY 18
R&D ekes out an increase in FY 2015 budget request (IE) MAY 23
Pulsed-power machine studies weapons, simulates stars (IE) JUN 24
Turmoil at ITER continues (IE) JUN 26
Global cooperation is key to US high-energy physics strategy (IE) JUL 18
How much will it cost to destroy stockpiled US plutonium? (IE) JUL 24
Are the makings of a dirty bomb in your neighborhood? (IE) AUG 22
Dark-matter searches (NN) SEP 25
DOE acquiring new supercomputers and climate models (IE) OCT 27
Public access (NN) OCT 29
Fusion breeding for sustainable carbon-free power, W. Manheimer (FOR) DEC 13
Big data goes high-speed across the Atlantic (IE) DEC 29

Department of Homeland Security

See Funding and budgets; Military physics and arms control; Science policy and politics

Earth science

See also Atmospheric science; Environment; Ocean science; Space and planetary science

Alternative models of the Moon's origin, D. U. Wise (FOR) JAN 8
Scoping out the North American continent, 10 years on (IE) JAN 19
Proposed sea vessel offers science on the drift (IE) JAN 23
"Science on a Sphere" has a global reach (IE) JAN 26
Florida's mangroves expand northward (UP) FEB 18
A nanoscale look at how soil captures carbon (SD) MAR 14
Whipping up sand dunes from scratch (SD) MAR 19
Digging into the past without a spade (IE) MAR 24
Role of black carbon in the Arctic's new normal, S. G. Warren; M. Jeffries, J. Overland, D. Perovich (FOR) MAY 8
Fewer large waves for eastern Australia (UP) MAY 17
Minerals and meteorites: Searching for new superconductors (IE) MAY 20
Three thermometers for Earth's upper mantle (UP) JUN 22
The art and science of forensic meteorology, E. Austin, P. Hildebrand (ART) JUN 32
From the archives: Analyzing atmospheric behavior, H. Panofsky (ART) JUN 38
Readers' perspectives highlight vagaries of progress in science, D. Soeder; M. Dubs (FOR) JUL 8
Trouble lies ahead for Antarctic ice (SD) JUL 10
Isotopes tell the story of lead in ancient Rome (SD) JUL 14
The Antarctic ozone hole: An update, A. R. Douglass, P. A. Newman, S. Solomon (ART) JUL 42
Extreme weather to increase around Indian Ocean (UP) AUG 19
Super fracking, D. L. Turcotte, E. M. Moores, J. B. Rundle (ART) AUG 34
A deep earthquake goes supershear (SD) SEP 13
What we know and don't know about tornado formation, P. Markowski, Y. Richardson (ART) SEP 26
Chelyabinsk: Portrait of an asteroid airburst, D. A. Kring, M. Boslough (ART) SEP 32
A new era of nuclear test verification, M. Auer, M. K. Prior (ART) SEP 39
Zinc ore catalyzes Earth's organic chemistry (UP) OCT 18
How a river transports sediment (UP) OCT 19
DOE acquiring new supercomputers and climate models (IE) OCT 27
How to deal with climate change, P. A. T. Higgins (ART) OCT 32
Imaging Earth daily to help humanity (IE) NOV 27
Making the Moon, D. J. Stevenson (ART) NOV 32
Cracking mud, freezing dirt, and breaking rocks, L. Goehring, S. W. Morris (ART) NOV 39
The changing width of Earth's tropical belt, T. Birner, S. M. Davis, D. J. Seidel (ART) DEC 38

Education

See also Employment and careers; Society and physics; Sociology of science
"Science on a Sphere" has a global reach (IE) JAN 26
Black-box electronics and passive learning, B. Battaille; K. Hess (FOR) FEB 11
Physics opens doors (NN) MAR 30
Notes on teaching physics to biologists, W. John; P. Murugesan; M. Rorvig; D. Meredith, J. Redish (FOR) APR 12
Graduate demographics in the US (NN) APR 27
Students in the sciences need to learn entrepreneurial skills, M. D. Levenson; A. Peekna; D. Arion (FOR) MAY 8
Psychological insights for improved physics teaching, L. Aguilar, G. Walton, C. Wieman (ART) MAY 43
Commentary: Massive open online courses and the future of education, H. F. Dylla (FOR) JUN 8
Availability of physics in US high schools (IE) JUL 25
UN's Basic Space Science Initiative: A follow-up report, H. J. Haubold (FOR) SEP 9
Bridge programs boost PhD enrollment among underrepresented minorities (IE) SEP 24
From Beijing to Kigali, ICTP makes itself at home in the developing world (IE) OCT 20
Graduates a year later (NN) OCT 29
Diverse suggestions for improving physics teaching, R. E. Megginson; W. DeBuvitz; S. Hassani; P. Hansen; A. Slepukov; L. Aguilar, G. Walton, C. Wieman (FOR) DEC 10

Electromagnetism

See Classical mechanics and electromagnetism

Electronic publishing

See Publishing, media, and the press

Electronics

See Computers and computational physics; Industry and physics; Instrumentation and techniques; Technology and engineering

Emergent phenomena

See also Nonlinear science; Theory and mathematical physics
Capturing the chaos of running (UP) FEB 19
Whipping up sand dunes from scratch (SD) MAR 19
Emergent-function realities, H. Cole (FOR) SEP 10
Emergent aerodynamics in wind farms, J. O. Dabiri (QS) OCT 66

Employment and careers

See also Education; Industry and physics; Society and physics; Sociology of science
Physics opens doors (NN) MAR 30
Students in the sciences need to learn entrepreneurial skills, M. D. Levenson; A. Peekna; D. Arion (FOR) MAY 8
From Beijing to Kigali, ICTP makes itself at home in the developing world (IE) OCT 20
Graduates a year later (NN) OCT 29

Energy

See also Department of Energy; Environment; Nuclear physics; Plasmas and fusion; Science policy and politics; Society and physics
US taking a hard look at its involvement in ITER (IE) FEB 20
Grid-scale battery research flows with ARPA-E support (IE) APR 24
ARPA-E, a success by some measures, remains fragile (IE) APR 26
Livermore ends LIFE (IE) APR 26; *correction* MAY 9
Unusual defect physics underlies perovskite solar cells' exceptional performance (SD) MAY 13
Liquid chemicals and fuels from natural gas (UP) MAY 17; *correction* JUL 9
Turmoil at ITER continues (IE) JUN 26
Nuclear energy output slows as climate warms (IE) JUN 28; *correction* SEP 10
Wireless power for tiny medical implants (SD) AUG 12
Charged polymers form unusual nanostructures (SD) AUG 16
Super fracking, D. L. Turcotte, E. M. Moores, J. B. Rundle (ART) AUG 34
A battery material charges via an unexpected mechanism (SD) SEP 11
Report urges more planning to cope with Fukushima-like event (IE) SEP 22
How to deal with climate change, P. A. T. Higgins (ART) OCT 32
Emergent aerodynamics in wind farms, J. O. Dabiri (QS) OCT 66
Space, nuclear trade eyed at US-India summit (IE) NOV 29
Fusion breeding for sustainable carbon-free power, W. Manheimer (FOR) DEC 13

Environment

See also Atmospheric science; Earth science; Energy; Ocean science; Science policy and politics; Society and physics
A model atmosphere (BS) JAN 72
Florida's mangroves expand northward (UP) FEB 18
A nanoscale look at how soil captures carbon (SD) MAR 14
Whipping up sand dunes from scratch (SD) MAR 19
Role of black carbon in the Arctic's new normal, S. G. Warren; M. Jeffries, J. Overland, D. Perovich (FOR) MAY 8
Fewer large waves for eastern Australia (UP) MAY 17
Nuclear energy output slows as climate warms (IE) JUN 28; *correction* SEP 10
The art and science of forensic meteorology, E. Austin, P. Hildebrand (ART) JUN 32
From the archives: Analyzing atmospheric behavior, H. Panofsky (ART) JUN 38
Trouble lies ahead for Antarctic ice (SD) JUL 10
The Antarctic ozone hole: An update, A. R. Douglass, P. A. Newman, S. Solomon (ART) JUL 42

Extreme weather to increase around Indian Ocean (UP) AUG 19

Scientists, White House say ocean acidification is well under way (IE) AUG 20

Are the makings of a dirty bomb in your neighborhood? (IE) AUG 22

Super fracking, D. L. Turcotte, E. M. Moores, J. B. Rundle (ART) AUG 34

What we know and don't know about tornado formation, P. Markowski, Y. Richardson (ART) SEP 26

Chelyabinsk: Portrait of an asteroid airburst, D. A. Kring, M. Boslough (ART) SEP 32

How a river transports sediment (UP) OCT 19

DOE acquiring new supercomputers and climate models (IE) OCT 27

How to deal with climate change, P. A. T. Higgins (ART) OCT 32

Emergent aerodynamics in wind farms, J. O. Dabiri (QS) OCT 66

Imaging Earth daily to help humanity (IE) NOV 27

Fusion breeding for sustainable carbon-free power, W. Manheimer (FOR) DEC 13

The changing width of Earth's tropical belt, T. Birner, S. M. Davis, D. J. Seidel (ART) DEC 38

Europe

See also International science

Digging into the past without a spade (IE) MAR 24

Europe launches newest R&D framework program (IE) MAR 26

ESA–CERN handshake (NN) MAY 22

Germany to exit the SKA (IE) AUG 25

Half of Portugal's research centers could see their funding plunge (IE) SEP 18

Bridging academia and industry the Fraunhofer way (IE) NOV 24

Fusion experiment crosses ocean (NN) NOV 30

Big data goes high-speed across the Atlantic (IE) DEC 29

Facilities and laboratories

See also Department of Energy; Funding and budgets

A lesson in defining “extinct,” P. Asimow (FOR) JAN 8

Scoping out the North American continent, 10 years on (IE) JAN 19

Proposed sea vessel offers science on the drift (IE) JAN 23

Commentary: Flattening the astronomy world, M. Mountain (FOR) FEB 8

US taking a hard look at its involvement in ITER (IE) FEB 20

Nuclear weapons costs detailed (NN) FEB 24

Israel joins CERN (NN) MAR 30

Geoscientists seek to save HAARP (IE) APR 22

Atmospheric research heats up at Arecibo (IE) APR 24

Livermore ends LIFE (IE) APR 26; *correction* MAY 9

ESA–CERN handshake (NN) MAY 22

Early history of Arecibo Observatory, P. H. Carr; R. M. Dowe Jr; D. Altschuler, C. Salter (FOR) JUN 11

Pulsed-power machine studies weapons, simulates stars (IE) JUN 24

Turmoil at ITER continues (IE) JUN 26

Researchers get back to the deep (IE) JUN 29

More ice, more neutrinos (NN) JUN 30

Global cooperation is key to US high-energy physics strategy (IE) JUL 18

Particle physicists brainstorm long-term collider options (IE) JUL 23

Canada CHIMES in on dark energy (IE) AUG 23

Germany to exit the SKA (IE) AUG 25

HAARP relieve (NN) AUG 25

Dark-matter searches (NN) SEP 25

DOE acquiring new supercomputers and climate models (IE) OCT 27

Physicists offer a different approach to cancer research (IE) NOV 22

Fusion experiment crosses ocean (NN) NOV 30

Fusion breeding for sustainable carbon-free power, W. Manheimer (FOR) DEC 13

Big data goes high-speed across the Atlantic (IE) DEC 29

The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

Fluids

See also Condensed-matter physics; Nonlinear science; Rheology

String formation in complex fluids (UP) MAR 21

Mimicking microcapillaries (UP) APR 21

Dynamics of a skydiver's epic free fall, J. M. Colino, A. J. Barbero, F. J. Tapiador (QS) APR 64

Mimicking cell mechanics (BS) MAY 76

Precision trapping on a microfluidic chip (UP) JUN 21

Model dynamo may solve Mercury mystery (SD) AUG 14

The influence of liquid flow on interfacial chemistry (UP) AUG 18

Ultrafast MRI of immiscible fluids (UP) AUG 19

Super fracking, D. L. Turcotte, E. M. Moores, J. B. Rundle (ART) AUG 34

The weight of water, P. Cavagnero, R. Revelli (ART) AUG 41

The sound of the slurry (UP) SEP 17

What we know and don't know about tornado formation, P. Markowski, Y. Richardson (ART) SEP 26

Chelyabinsk: Portrait of an asteroid airburst, D. A. Kring, M. Boslough (ART) SEP 32

Emergent aerodynamics in wind farms, J. O. Dabiri (QS) OCT 66

Bathtub physics (BS) OCT 88

Shock waves and history in free fall, A. M. Gañán-Calvo; A. Spero; D. Wright; J. M. Colino, A. J. Barbero, F. J. Tapiador (FOR) NOV 9

Quantized vortices in a nanodroplet (SD) NOV 16

Watching nematodes swim the channel (UP) DEC 22

Hawking radiation from fluids (UP) DEC 23

Water-skipping stones and spheres, T. Truscott, J. Belden, R. Hurd (QS) DEC 70

Fundamental constants

See Metrology and fundamental constants

Funding and budgets

See also Department of Energy; Facilities and laboratories; International science; NASA; National Science Foundation; Science policy and politics

The DOE might prefer a living planet, B. Zuckerman (FOR) JAN 9

State science academies seek their niche (IE) JAN 22

Proposed sea vessel offers science on the drift (IE) JAN 23

US taking a hard look at its involvement in ITER (IE) FEB 20

Nuclear weapons costs detailed (NN) FEB 24

Europe launches newest R&D framework program (IE) MAR 26

Finally, some solid numbers for federal science budgets (IE) MAR 28

Grid-scale battery research flows with ARPA–E support (IE) APR 24

ARPA–E, a success by some measures, remains fragile (IE) APR 26

At DOE, nonproliferation sinks despite its success (IE) MAY 18

R&D ekes out an increase in FY 2015 budget request (IE) MAY 23

Venerable Virginia science academy welcomes new one, D. A. O'Dell (FOR) JUN 12

Turmoil at ITER continues (IE) JUN 26

Global cooperation is key to US high-energy physics strategy (IE) JUL 18

How much will it cost to destroy stockpiled US plutonium? (IE) JUL 24

Half of Portugal's research centers could see their funding plunge (IE) SEP 18

Dark-matter searches (NN) SEP 25

DOE acquiring new supercomputers and climate models (IE) OCT 27

Physicists offer a different approach to cancer research (IE) NOV 22

Emphasis on short-term gains worries Australia's science community (IE) DEC 24

Fusion and plasmas

See Plasmas and fusion

Geophysics

See Atmospheric science; Earth science; Energy; Environment; Ocean science; Space and planetary science

Government and physics

See Science policy and politics

High-pressure physics

See Condensed-matter physics; Earth science; Space and planetary science

History and philosophy

See also Biography and personalities; Obituaries; Sociology of science

Paul Ehrenfest's final years, D. van Delft (ART) JAN 41

Revolutionary physics in reactionary Argentina, W. Bietenholz, L. Prado (ART) FEB 38

Commentary: What I think about Now, N. D. Mermin (FOR) MAR 8

Early chaos theory, D. Ruelle; D. Shepelyansky; A. E. Motter, D. K. Campbell (FOR) MAR 9

Time, laws, and the future of cosmology, L. Smolin (ART) MAR 38

Taiwan's science miracle, T. Feder (ART) MAR 45; *correction* MAY 9

Russia and the US in the Cold War arms race, A. DeVolpi; J. Benford; G. Benford; J. A. Swegle; J. Carroll; F. von Hippel (FOR) APR 8

Nuclear proliferation and testing: A tale of two treaties, P. S. Corden, D. Hafemeister (ART) APR 41

Early sightings of comets near the Sun, J. M. Vaquero (FOR) MAY 9

Early history of Arecibo Observatory, P. H. Carr; R. M. Dowe Jr; D. Altschuler, C. Salter (FOR) JUN 11

Organic thin films: From monolayers on liquids to multilayers on solids, J. E. Greene (ART) JUN 43

Readers' perspectives highlight vagaries of progress in science, D. Soeder; M. Dubs (FOR) JUL 8

The Antarctic ozone hole: An update, A. R. Douglass, P. A. Newman, S. Solomon (ART) JUL 42

The weight of water, P. Cavagnero, R. Revelli (ART) AUG 41

Classical and quantum framing of the Now, B. K. Ridley; B. Tatian; J. B. Hartle; N. D. Mermin (FOR) SEP 8

Out of Ehrenfest's closet, A. Yelon (FOR) SEP 9

Black holes in cosmological natural selection, P. Sorensen; J. Winkler; L. Smolin (FOR) OCT 8

Challenges in national nuclear security need specific, viable solutions, R. Johnston; R. Wilson; P. Corden, D. Hafemeister (FOR) NOV 8

The conceptual origins of Maxwell's equations and gauge theory, C. N. Yang (ART) NOV 45

The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

From the archives: Design for acoustics, L. L. Beranek (ART) DEC 52

Human rights

See International science; Society and physics; Sociology of science

Industry and physics

See also Employment and careers; Sociology of science; Technology and engineering

US output of critical medical isotope to begin this year (IE) JAN 24

Space station research to get new lease on life (IE) MAR 22

Europe launches newest R&D framework program (IE) MAR 26

Students in the sciences need to learn entrepreneurial skills, M. D. Levenson; A. Peekna; D. Arion (FOR) MAY 8

Better superconducting wires (UP) MAY 17

Super fracking, D. L. Turcotte, E. M. Moores, J. B. Rundle (ART) AUG 34

The sound of the slurry (UP) SEP 17

White House offers encouragement for cyberphysical systems (IE) SEP 20

Report urges more planning to cope with Fukushima-like event (IE) SEP 22

DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23

Bridging academia and industry the Fraunhofer way (IE) NOV 24

Imaging Earth daily to help humanity (IE) NOV 27
Top-down nanomanufacturing, M. Imboden, D. Bishop (ART) DEC 45

Instrumentation and techniques

See also Metrology and fundamental constants; Microscopy; Technology and engineering

Nuclear magnetic resonance takes a reaction's temperature (SD) JAN 12

Microphones step up to the plate (UP) JAN 16

Toward imaging the brain's tiniest arteries (UP) JAN 16

Phonon spectrometry goes nanoscale (SD) FEB 16

High-speed nanomaterial synthesis and discovery (UP) FEB 19

Circulating tumor cells: Cancer's deadly couriers, C. T. Lim, D. S. B. Hoon (ART) FEB 26

Optical-lattice clock sets new standard for timekeeping (SD) MAR 12

A long-lived optical waveguide made out of thin air (SD) MAR 16

Diagnosing malaria using light and sound (UP) MAR 20

Digging into the past without a spade (IE) MAR 24

Seeing voices: Imaging the earliest sound recordings, C. Haber (QS) MAR 68

Probing the accelerating universe, J. Frieman (ART) APR 28; correction JUL 9

Nanoscale ordering from bulk processing (SD) MAY 15

Macrophages in a liquid biopsy (UP) MAY 16

A new angle on electron microscopy (UP) MAY 16

Better superconducting wires (UP) MAY 17

De Broglie's meter stick: Making measurements with matter waves, M. Arndt (ART) MAY 30

Early history of Arecibo Observatory, P. H. Carr; R. M. Dowe Jr; D. Altschuler, C. Salter (FOR) JUN 11

A diamond brightness converter (UP) JUN 21

Precision trapping on a microfluidic chip (UP) JUN 21

What's in that bottle? M. Espy, J. Hunter, L. Schultz (QS) JUN 62

Ultrafast electron diffraction from an ultracold source (SD) JUL 12

The magnetic hose (UP) JUL 17

A more fundamental International System of Units, D. B. Newell (ART) JUL 35

Bubbles in contrast (BS) JUL 68

Tailor-made surface swaps light polarization (UP) AUG 18

Ultrafast MRI of immiscible fluids (UP) AUG 19

Heat under the microscope, I. Maasilta, A. J. Minnich (ART) AUG 27

3D printing, inspired by wood (BS) AUG 68

The sound of the slurry (UP) SEP 17

Tailor-made molecules grow into identical carbon nanotubes (SD) OCT 14

DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23

Atom-like crystal defects: From quantum computers to biological sensors, L. Childress, R. Walsworth, M. Lukin (ART) OCT 38

Fourier plane imaging microscopy (UP) NOV 20

Squeezing quantum noise, S. Dwyer (QS) NOV 72

Where bone meets implant (BS) NOV 96

Chemistry Nobel honors developers of superresolution microscopy (SD) DEC 18

High-resolution imaging meets vibrational spectroscopy (UP) DEC 22

Spontaneous fluctuations in a ferromagnetic film (UP) DEC 22

A smart wall for cell phones and tablets (UP) DEC 23

The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

Top-down nanomanufacturing, M. Imboden, D. Bishop (ART) DEC 45

International science

See also Asia; Europe; Funding and budgets; Science policy and politics

A lesson in defining "extinct," P. Asimow (FOR) JAN 8

Proposed sea vessel offers science on the drift (IE) JAN 23

US taking a hard look at its involvement in ITER (IE) FEB 20

Space station research to get new lease on life (IE) MAR 22

Digging into the past without a spade (IE) MAR 24

Israel joins CERN (NN) MAR 30

Russia and the US in the Cold War arms race, A. DeVolpi; J. Benford; G. Benford; J. A. Swegle; J. Carroll; F. von Hippel (FOR) APR 8

Nuclear proliferation and testing: A tale of two treaties, P. S. Corden, D. Hafemeister (ART) APR 41

At DOE, nonproliferation sinks despite its success (IE) MAY 18

ESA–CERN handshake (NN) MAY 22

Serving science or serving politics, V. Lukin (FOR) JUN 10

Turmoil at ITER continues (IE) JUN 26

Nuclear energy output slows as climate warms (IE) JUN 28; correction SEP 10

Global cooperation is key to US high-energy physics strategy (IE) JUL 18

Particle physicists brainstorm long-term collider options (IE) JUL 23

A more fundamental International System of Units, D. B. Newell (ART) JUL 35

Canada CHIMES in on dark energy (IE) AUG 23

Germany to exit the SKA (IE) AUG 25

UN's Basic Space Science Initiative: A follow-up report, H. J. Haubold (FOR) SEP 9

Report urges more planning to cope with Fukushima-like event (IE) SEP 22

Kazakhstan hosts 2014 physics competition (IE) SEP 25

From Beijing to Kigali, ICTP makes itself at home in the developing world (IE) OCT 20

New telescope in Turkey (IE) OCT 26

Challenges in national nuclear security need specific, viable solutions, R. Johnston; R. Wilson; P. Corden, D. Hafemeister (FOR) NOV 8

Bridging academia and industry the Fraunhofer way (IE) NOV 24

Space, nuclear trade eyed at US–India summit (IE) NOV 29

Fusion experiment crosses ocean (NN) NOV 30

Emphasis on short-term gains worries Australia's science community (IE) DEC 24

Fractures are widening on nonproliferation treaty (IE) DEC 27

Big data goes high-speed across the Atlantic (IE) DEC 29

Prisoner of conscience to get retrial in Iran (IE) DEC 30

The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

Japan

See Asia; International science

Journals

See Publishing, media, and the press

Lasers and photonics

See also Instrumentation and techniques; Optics; Quantum physics

A new twist on the Doppler shift, M. Padgett (QS) FEB 58; correction JUL 9

A long-lived optical waveguide made out of thin air (SD) MAR 16

Diagnosing malaria using light and sound (UP) MAR 20

Nonlinear microscopy looks beneath the surface of historic artwork (SD) APR 17

Topological physics with light, M. Hafezi, J. M. Taylor (QS) MAY 68

A diamond brightness converter (UP) JUN 21

Frog eyes show prowess as quantum sensors (SD) JUL 16

Lasers will shine in future warfare (IE) JUL 20

Tailor-made surface swaps light polarization (UP) AUG 18

A quantum switch routes photons one by one (SD) SEP 15

DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23

Squeezing quantum noise, S. Dwyer (QS) NOV 72

Nobel Prize in Physics recognizes research leading to high-brightness blue LEDs (SD) DEC 14

Latin America

See International science

Low-temperature physics

See Instrumentation and techniques; Quantum physics

Magnetism

See Classical mechanics and electromagnetism; Condensed-matter physics; Earth science; Quantum physics; Space and planetary science

Materials science

See also Chemical and molecular physics; Condensed-matter physics; Microstructures and nanostructures

When paintings go bad (UP) JAN 16

Notes on the glass-forming ability of bulk metallic glasses, J. Liu; J. Schroers (FOR) FEB 10

High-speed nanomaterial synthesis and discovery (UP) FEB 19

A phase-change alloy that crystallizes without shrinking (UP) FEB 19

Taking stock of the nanotechnology consumer products market (IE) FEB 22

A flexible approach to flexible electronics (BS) FEB 68

Understanding *qi-wa*, the curling of scrolled artwork (UP) MAR 21

Metamaterials twist sound (UP) APR 20

Grid-scale battery research flows with ARPA–E support (IE) APR 24

Unusual defect physics underlies perovskite solar cells' exceptional performance (SD) MAY 13

Nanoscale ordering from bulk processing (SD) MAY 15

Filtering light by angle (UP) MAY 16

Minerals and meteorites: Searching for new superconductors (IE) MAY 20

Topological physics with light, M. Hafezi, J. M. Taylor (QS) MAY 68

Simple compound manifests record-high thermoelectric performance (SD) JUN 14

Thermal cycling breaks down asteroid boulders (SD) JUN 16

A new kind of self-assembled monolayer (SD) JUN 20

A diamond brightness converter (UP) JUN 21

Organic thin films: From monolayers on liquids to multilayers on solids, J. E. Greene (ART) JUN 43

Readers' perspectives highlight vagaries of progress in science, D. Soeder; M. Dubs (FOR) JUL 8

The magnetic hose (UP) JUL 17

Tailor-made surface swaps light polarization (UP) AUG 18

Bringing out the flex in flexoelectrics (UP) AUG 19

3D printing, inspired by wood (BS) AUG 68

A battery material charges via an unexpected mechanism (SD) SEP 11

Walking a silicon atom through a graphene landscape (UP) SEP 16

Tailor-made molecules grow into identical carbon nanotubes (SD) OCT 14

Collaboration unlocks self-replicating crack patterns (SD) NOV 18

Graphene's newest cousin, germanene (UP) NOV 20

Cracking mud, freezing dirt, and breaking rocks, L. Goehring, S. W. Morris (ART) NOV 39

Where bone meets implant (BS) NOV 96

Nobel Prize in Physics recognizes research leading to high-brightness blue LEDs (SD) DEC 14

Spontaneous fluctuations in a ferromagnetic film (UP) DEC 22

Top-down nanomanufacturing, M. Imboden, D. Bishop (ART) DEC 45

Water-skipping stones and spheres, T. Truscott, J. Belden, R. Hurd (QS) DEC 70

Mathematical physics

See Theory and mathematical physics

Mechanics

See Classical mechanics and electromagnetism

Media and the press

See Publishing, media, and the press; Society and physics

Medical physics

See also Biological physics; Crystallography

Toward imaging the brain's tiniest arteries (UP) JAN 16

US output of critical medical isotope to begin this year (IE) JAN 24

Circulating tumor cells: Cancer's deadly couriers, C. T. Lim, D. S. B. Hoon (ART) FEB 26
 Diagnosing malaria using light and sound (UP) MAR 20
 Notes on teaching physics to biologists, W. John; P. Murugesan; M. Rorvig; D. Meredith, J. Redish (FOR) APR 12
 Macrophages in a liquid biopsy (UP) MAY 16
 Wireless power for tiny medical implants (SD) AUG 12
 Physicists offer a different approach to cancer research (IE) NOV 22
 Where bone meets implant (BS) NOV 96

Meteorology

See Atmospheric science; Earth science; Environment

Metrology and fundamental constants

See also Instrumentation and techniques
 Optical-lattice clock sets new standard for timekeeping (SD) MAR 12
De Broglie's meter stick: Making measurements with matter waves, M. Arndt (ART) MAY 30
 Historical notes on the expanding universe, M. Way, A. Belenkiy, H. Nussbaumer, J. Peacock; M. Livio, A. Riess (FOR) JUL 8
The search for Newton's constant, C. Speake, T. Quinn (ART) JUL 27
A more fundamental International System of Units, D. B. Newell (ART) JUL 35
 Confirming antihydrogen neutrality with voltage bias (UP) AUG 18
 DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23
 Squeezing quantum noise, S. Dwyer (QS) NOV 72

Microscopy

See also Instrumentation and techniques; Lasers and photonics; Optics
 Nonlinear microscopy looks beneath the surface of historic artwork (SD) APR 17
 A new angle on electron microscopy (UP) MAY 16
 Bubbles in contrast (BS) JUL 68
 Walking a silicon atom through a graphene landscape (UP) SEP 16
 Fourier plane imaging microscopy (UP) NOV 20
 Where bone meets implant (BS) NOV 96
 Chemistry Nobel honors developers of superresolution microscopy (SD) DEC 18
 High-resolution imaging meets vibrational spectroscopy (UP) DEC 22
 Spontaneous fluctuations in a ferromagnetic film (UP) DEC 22

Microstructures and nanostructures

See also Condensed-matter physics; Materials science; Quantum physics
 Microphones step up to the plate (UP) JAN 16
 Notes on the glass-forming ability of bulk metallic glasses, J. Liu; J. Schroers (FOR) FEB 10
 Phonon spectrometry goes nanoscale (SD) FEB 16
 High-speed nanomaterial synthesis and discovery (UP) FEB 19
 Taking stock of the nanotechnology consumer products market (IE) FEB 22
 Topological physics with light, M. Hafezi, J. M. Taylor (QS) MAY 68
 Readers' perspectives highlight vagaries of progress in science, D. Soeder; M. Dubs (FOR) JUL 8
 Charged polymers form unusual nanostructures (SD) AUG 16
 Tailor-made surface swaps light polarization (UP) AUG 18
 A battery material charges via an unexpected mechanism (SD) SEP 11
 A quantum switch routes photons one by one (SD) SEP 15
 Walking a silicon atom through a graphene landscape (UP) SEP 16
 Tailor-made molecules grow into identical carbon nanotubes (SD) OCT 14

Quantum electrodynamics in a semiconductor vacuum (UP) OCT 18
 DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23
Atom-like crystal defects: From quantum computers to biological sensors, L. Childress, R. Walsworth, M. Lukin (ART) OCT 38
 Collaboration unlocks self-replicating crack patterns (SD) NOV 18
 Where bone meets implant (BS) NOV 96
 Spontaneous fluctuations in a ferromagnetic film (UP) DEC 22
 Reversed diffraction in bio-inspired photonic materials (UP) DEC 23
 A smart wall for cell phones and tablets (UP) DEC 23
Top-down nanomanufacturing, M. Imboden, D. Bishop (ART) DEC 45

Military physics and arms control

See also Funding and budgets; Nuclear physics; Science policy and politics; Society and physics
 Nuclear weapons costs detailed (NN) FEB 24
 Finally, some solid numbers for federal science budgets (IE) MAR 28
 Russia and the US in the Cold War arms race, A. DeVolpi; J. Benford; G. Benford; J. A. Swegle; J. Carroll; F. von Hippel (FOR) APR 8
Nuclear proliferation and testing: A tale of two treaties, P. S. Corden, D. Hafemeister (ART) APR 41
 At DOE, nonproliferation sinks despite its success (IE) MAY 18
 R&D ekes out an increase in FY 2015 budget request (IE) MAY 23
 Pulsed-power machine studies weapons, simulates stars (IE) JUN 24
 Lasers will shine in future warfare (IE) JUL 20
 How much will it cost to destroy stockpiled US plutonium? (IE) JUL 24
 Are the makings of a dirty bomb in your neighborhood? (IE) AUG 22
A new era of nuclear test verification, M. Auer, M. K. Prior (ART) SEP 39
 DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23
 Challenges in national nuclear security need specific, viable solutions, R. Johnston; R. Wilson; P. Corden, D. Hafemeister (FOR) NOV 8
 Fractures are widening on nonproliferation treaty (IE) DEC 27

Minorities in physics

See Sociology of science

Molecular physics

See Chemical and molecular physics

Nanostructures

See Microstructures and nanostructures

NASA

See also Funding and budgets; Science policy and politics
 The DOE might prefer a living planet, B. Zuckerman (FOR) JAN 9
 Space station research to get new lease on life (IE) MAR 22
 Finally, some solid numbers for federal science budgets (IE) MAR 28
 R&D ekes out an increase in FY 2015 budget request (IE) MAY 23
 Space, nuclear trade eyed at US–India summit (IE) NOV 29
The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

National Institute of Standards and Technology

See Facilities and laboratories; Funding and budgets; Metrology and fundamental constants; Science policy and politics

National laboratories

See Department of Energy; Facilities and laboratories

National Science Foundation

See also Funding and budgets; Science policy and politics
 Scoping out the North American continent, 10 years on (IE) JAN 19
 Finally, some solid numbers for federal science budgets (IE) MAR 28
 R&D ekes out an increase in FY 2015 budget request (IE) MAY 23
 Global cooperation is key to US high-energy physics strategy (IE) JUL 18
 Dark-matter searches (NN) SEP 25

Nonlinear science

See also Computers and computational physics; Emergent phenomena; Fluids; Rheology; Theory and mathematical physics
 The math behind the scene of the crime, M. B. Short (QS) JAN 58
 Capturing the chaos of running (UP) FEB 19
 Early chaos theory, D. Ruelle; D. Shpehlyansky; A. E. Motter, D. K. Campbell (FOR) MAR 9
 Nonlinear microscopy looks beneath the surface of historic artwork (SD) APR 17
 A fruit-fly gene network may be tuned to a critical point (SD) APR 19
 One mystery of magnetic plasma confinement solved (UP) JUL 17
 Controlling a tipping point (UP) SEP 17

Nuclear physics

See also Atomic physics; Energy; Military physics and arms control; Particle physics
 The DOE might prefer a living planet, B. Zuckerman (FOR) JAN 9
 US output of critical medical isotope to begin this year (IE) JAN 24
 Nuclear weapons costs detailed (NN) FEB 24
 How much will it cost to destroy stockpiled US plutonium? (IE) JUL 24
 Are the makings of a dirty bomb in your neighborhood? (IE) AUG 22
 Report urges more planning to cope with Fukushima-like event (IE) SEP 22
A new era of nuclear test verification, M. Auer, M. K. Prior (ART) SEP 39

Nuclear reactors and nuclear energy

See Department of Energy; Energy; Nuclear physics

Nuclear weapons

See Department of Energy; Military physics and arms control

Obituaries

See also Biography and personalities; History and philosophy
 H. M. Agnew (OB) JAN 56
 R. L. Arnowitt (OB) DEC 68
 R. E. Azuma (OB) FEB 56
 A. G. Bose (OB) MAY 64
 G. V. Chester (OB) OCT 64
 J. R. Clem (OB) JAN 56
 S. A. Colgate (OB) SEP 54
 G. D. Dracoulis (OB) NOV 66
 J. M. Fowler (OB) JUL 59
 G. S. Guralnik (OB) AUG 57
 M. C. Gutzwiller (OB) JUN 60
 M. E. Jacob (OB) MAY 65
 I. P. Kaminow (OB) NOV 66
 J. Karle (OB) FEB 57
 F. Kavli (OB) MAY 65
 J. G. King (OB) NOV 68

H.-C. Liu (OB) APR 61
 D. M. Mihalas (OB) SEP 55
 R. Resnick (OB) MAY 66
 S. H. Rhie (OB) MAR 64
 L. W. Seagondollar (OB) MAR 64
 A. M. Sessler (OB) AUG 58
 W. K. Sinclair (OB) DEC 68
 K. N. Stevens (OB) APR 61
 N. G. van Kampen (OB) MAR 66
 A. M. Wolfe (OB) OCT 64
 B. Zumino (OB) NOV 69

Ocean science

See also Atmospheric science; Earth science; Environment
 Proposed sea vessel offers science on the drift (IE) JAN 23
 Role of black carbon in the Arctic's new normal, S. G. Warren; M. Jeffries, J. Overland, D. Perovich (FOR) MAY 8
 Fewer large waves for eastern Australia (UP) MAY 17
 Researchers get back to the deep (IE) JUN 29
 Scientists, White House say ocean acidification is well under way (IE) AUG 20
 A new era of nuclear test verification, M. Auer, M. K. Prior (ART) SEP 39

Office of Science and Technology Policy

See Science policy and politics

Optical Society of America

See Scientific societies

Optics

See also Instrumentation and techniques; Lasers and photonics; Microscopy
 A new twist on the Doppler shift, M. Padgett (QS) FEB 58; *correction* JUL 9
 A long-lived optical waveguide made out of thin air (SD) MAR 16
 Seeing voices: Imaging the earliest sound recordings, C. Haber (QS) MAR 68
 Filtering light by angle (UP) MAY 16
 A new angle on electron microscopy (UP) MAY 16
 Lasers will shine in future warfare (IE) JUL 20
 Tailor-made surface swaps light polarization (UP) AUG 18
 Fourier plane imaging microscopy (UP) NOV 20
 Nobel Prize in Physics recognizes research leading to high-brightness blue LEDs (SD) DEC 14
 Chemistry Nobel honors developers of superresolution microscopy (SD) DEC 18
 Reversed diffraction in bio-inspired photonic materials (UP) DEC 23
 A smart wall for cell phones and tablets (UP) DEC 23

Optoelectronics

See Lasers and photonics; Optics

Particle physics

See also Cosmology and general relativity; Nuclear physics; Theory and mathematical physics
Particle Fever: A look behind the scenes of the Higgs discovery (IE) FEB 22
Revolutionary physics in reactionary Argentina, W. Bietenholz, L. Prado (ART) FEB 38
 Israel joins CERN (NN) MAR 30
 Seeing voices: Imaging the earliest sound recordings, C. Haber (QS) MAR 68
 Surprising upper limit on the electron's electric dipole moment (SD) APR 15
 To catch a solar neutrino, search at night (UP) APR 20
 Looking for microscopic black holes (UP) MAY 16
 ESA–CERN handshake (NN) MAY 22
 More ice, more neutrinos (NN) JUN 30
 Global cooperation is key to US high-energy physics strategy (IE) JUL 18
 Particle physicists brainstorm long-term collider options (IE) JUL 23

Confirming antihydrogen neutrality with voltage bias (UP) AUG 18
 Extremely energetic cosmic rays from a preferred direction (UP) SEP 16
 Dark-matter searches (NN) SEP 25
 Exotic particles with four or more quarks, S. L. Olsen (QS) SEP 56
 An elementary particle collision never before observed (UP) OCT 19
 Scintillator yields glimpse of elusive solar neutrinos (SD) NOV 12
The conceptual origins of Maxwell's equations and gauge theory, C. N. Yang (ART) NOV 45
 Big data goes high-speed across the Atlantic (IE) DEC 29

Philosophy of science

See History and philosophy

Planetary science

See Earth science; Space and planetary science

Plasmas and fusion

See also Astronomy and astrophysics; Energy; Space and planetary science
 The search for magnetic reconnection in solar flares, P. Foukal (FOR) JAN 8
 The DOE might prefer a living planet, B. Zuckerman (FOR) JAN 9
 US taking a hard look at its involvement in ITER (IE) FEB 20
 A long-lived optical waveguide made out of thin air (SD) MAR 16
 Livermore ends LIFE (IE) APR 26; *correction* MAY 9
 Pulsed-power machine studies weapons, simulates stars (IE) JUN 24
 Turmoil at ITER continues (IE) JUN 26
 Circularly polarized light from a gamma-ray burst (UP) JUL 16
 One mystery of magnetic plasma confinement solved (UP) JUL 17
 Solving mazes with glowing plasma (UP) NOV 20
 Fusion experiment crosses ocean (NN) NOV 30
 Fusion breeding for sustainable carbon-free power, W. Manheimer (FOR) DEC 13

Public understanding of science

See Society and physics

Publishing, media, and the press

See also Sociology of science
 Weighing in on the cost of research papers, G. Paulikas (FOR) MAY 9
 Readers' perspectives highlight vagaries of progress in science, D. Soeder; M. Dubs (FOR) JUL 8
 Citation counts and indices: Beware of bad data, C. Will (FOR) AUG 10
 Public access (NN) OCT 29

Quantum physics

See also Atomic physics; Chemical and molecular physics; Lasers and photonics; Microstructures and nanostructures; Theory and mathematical physics
Bohr's molecular model, a century later, A. Svidzinsky, M. Scully, D. Herschbach (ART) JAN 33
 Noninteracting quantum gas cools when diluted (UP) FEB 18
 Commentary: What I think about Now, N. D. Mermin (FOR) MAR 8
 Optical-lattice clock sets new standard for timekeeping (SD) MAR 12
De Broglie's meter stick: Making measurements with matter waves, M. Arndt (ART) MAY 30
 Topological physics with light, M. Hafezi, J. M. Taylor (QS) MAY 68
 A final note on the existence of event horizons, G. Chapline; S. B. Giddings (FOR) JUN 10
 Frog eyes show prowess as quantum sensors (SD) JUL 16

Bohr's molecular model and the melding of classical and quantum mechanics, M. Y. Amusia; L. Mlodinow; P. Grujic; A. Svidzinsky, M. Scully, D. Herschbach (FOR) AUG 8
 The Casimir force in one dimension (UP) AUG 18
 Classical and quantum framing of the Now, B. K. Ridley; B. Tattian; J. B. Hartle; N. D. Mermin (FOR) SEP 8
 A quantum switch routes photons one by one (SD) SEP 15
 Quantum electrodynamics in a semiconductor vacuum (UP) OCT 18
Atom-like crystal defects: From quantum computers to biological sensors, L. Childress, R. Walsworth, M. Lukin (ART) OCT 38
Quantum Darwinism, classical reality, and the randomness of quantum jumps, W. H. Zurek (ART) OCT 44
 Quantized vortices in a nanodroplet (SD) NOV 16
 Squeezing quantum noise, S. Dwyer (QS) NOV 72
 Hawking radiation from fluids (UP) DEC 23

Rheology

See also Condensed-matter physics; Fluids; Nonlinear science
 String formation in complex fluids (UP) MAR 21
 Mimicking microcapillaries (UP) APR 21
 Mimicking cell mechanics (BS) MAY 76
 The influence of liquid flow on interfacial chemistry (UP) AUG 18
 Ultrafast MRI of immiscible fluids (UP) AUG 19
Super fracking, D. L. Turcotte, E. M. Moores, J. B. Rundle (ART) AUG 34
 3D printing, inspired by wood (BS) AUG 68
 The sound of the slurry (UP) SEP 17

Russia

See Asia; Europe; International science

Science policy and politics

See also Funding and budgets; International science; Military physics and arms control; Society and physics; Sociology of science
 The DOE might prefer a living planet, B. Zuckerman (FOR) JAN 9
 State science academies seek their niche (IE) JAN 22
 US output of critical medical isotope to begin this year (IE) JAN 24
 Commentary: Flattening the astronomy world, M. Mountain (FOR) FEB 8
 US taking a hard look at its involvement in ITER (IE) FEB 20
 Taking stock of the nanotechnology consumer products market (IE) FEB 22
 Nuclear weapons costs detailed (NN) FEB 24
 Space station research to get new lease on life (IE) MAR 22
 Europe launches newest R&D framework program (IE) MAR 26
 Finally, some solid numbers for federal science budgets (IE) MAR 28
Taiwan's science miracle, T. Feder (ART) MAR 45; *correction* MAY 9
 Russia and the US in the Cold War arms race, A. DeVolpi; J. Benford; G. Benford; J. A. Swegle; J. Carroll; F. von Hippel (FOR) APR 8
 Geoscientists seek to save HAARP (IE) APR 22
 Grid-scale battery research flows with ARPA–E support (IE) APR 24
 ARPA–E, a success by some measures, remains fragile (IE) APR 26
 Livermore ends LIFE (IE) APR 26; *correction* MAY 9
Nuclear proliferation and testing: A tale of two treaties, P. S. Corden, D. Hafemeister (ART) APR 41
 Weighing in on the cost of research papers, G. Paulikas (FOR) MAY 9
 At DOE, nonproliferation sinks despite its success (IE) MAY 18
 R&D ekes out an increase in FY 2015 budget request (IE) MAY 23
 Serving science or serving politics, V. Lukin (FOR) JUN 10
 Venerable Virginia science academy welcomes new one, D. A. O'Dell (FOR) JUN 12
 Turmoil at ITER continues (IE) JUN 26
 Nuclear energy output slows as climate warms (IE) JUN 28; *correction* SEP 10
 Global cooperation is key to US high-energy physics strategy (IE) JUL 18
 Lasers will shine in future warfare (IE) JUL 20

How much will it cost to destroy stockpiled US plutonium? (IE) JUL 24

The Antarctic ozone hole: An update, A. R. Douglass, P. A. Newman, S. Solomon (ART) JUL 42

Scientists, White House say ocean acidification is well under way (IE) AUG 20

Are the makings of a dirty bomb in your neighborhood? (IE) AUG 22

Germany to exit the SKA (IE) AUG 25

HAARP relieve (NN) AUG 25

UN's Basic Space Science Initiative: A follow-up report, H. J. Haubold (FOR) SEP 9

Half of Portugal's research centers could see their funding plunge (IE) SEP 18

White House offers encouragement for cyberphysical systems (IE) SEP 20

Report urges more planning to cope with Fukushima-like event (IE) SEP 22

A new era of nuclear test verification, M. Auer, M. K. Prior (ART) SEP 39

DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23

DOE acquiring new supercomputers and climate models (IE) OCT 27

Public access (NN) OCT 29

How to deal with climate change, P. A. T. Higgins (ART) OCT 32

Challenges in national nuclear security need specific, viable solutions, R. Johnston; R. Wilson; P. Corden, D. Hafemeister (FOR) NOV 8

Physicists offer a different approach to cancer research (IE) NOV 22

Space, nuclear trade eyed at US–India summit (IE) NOV 29

Fusion breeding for sustainable carbon-free power, W. Manheimer (FOR) DEC 13

Emphasis on short-term gains worries Australia's science community (IE) DEC 24

Prisoner of conscience to get retrial in Iran (IE) DEC 30

The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

Scientific societies

Physics opens doors (NN) MAR 30

Availability of physics in US high schools (IE) JUL 25

Bridge programs boost PhD enrollment among underrepresented minorities (IE) SEP 24

Kazakhstan hosts 2014 physics competition (IE) SEP 25

Graduates a year later (NN) OCT 29

The Orange Wave (BS) DEC 96

Semiconductors

See Condensed-matter physics; Industry and physics; Lasers and photonics; Materials science; Microstructures and nanostructures; Quantum physics; Technology and engineering

Society and physics

See also Education; Employment and careers; Energy; Environment; Military physics and arms control; Publishing, media, and the press; Science policy and politics; Sociology of science

State science academies seek their niche (IE) JAN 22

"Science on a Sphere" has a global reach (IE) JAN 26

The math behind the scene of the crime, M. B. Short (QS) JAN 58

For some questions, science may not have answers, M. Alexanian (FOR) FEB 12

Particle Fever: A look behind the scenes of the Higgs discovery (IE) FEB 22

Taking stock of the nanotechnology consumer products market (IE) FEB 22

Taiwan's science miracle, T. Feder (ART) MAR 45; *correction* MAY 9

Seeing voices: Imaging the earliest sound recordings, C. Haber (QS) MAR 68

Minerals and meteorites: Searching for new superconductors (IE) MAY 20

Psychological insights for improved physics teaching, L. Aguilar, G. Walton, C. Wieman (ART) MAY 43

Commentary: Massive open online courses and the future of education, H. F. Dylla (FOR) JUN 8

Serving science or serving politics, V. Lukin (FOR) JUN 10

Early history of Arecibo Observatory, P. H. Carr; R. M. Dowe Jr; D. Altschuler, C. Salter (FOR) JUN 11

Venerable Virginia science academy welcomes new one, D. A. O'Dell (FOR) JUN 12

Nuclear energy output slows as climate warms (IE) JUN 28; *correction* SEP 10

The art and science of forensic meteorology, E. Austin, P. Hildebrand (ART) JUN 32

What's in that bottle? M. Espy, J. Hunter, L. Schultz (QS) JUN 62

Isotopes tell the story of lead in ancient Rome (SD) JUL 14

Scientists, White House say ocean acidification is well under way (IE) AUG 20

UN's Basic Space Science Initiative: A follow-up report, H. J. Haubold (FOR) SEP 9

Emergent-function realities, H. Cole (FOR) SEP 10

White House offers encouragement for cyberphysical systems (IE) SEP 20

Report urges more planning to cope with Fukushima-like event (IE) SEP 22

Kazakhstan hosts 2014 physics competition (IE) SEP 25

What we know and don't know about tornado formation, P. Markowski, Y. Richardson (ART) SEP 26

Chelyabinsk: Portrait of an asteroid airburst, D. A. Kring, M. Boslough (ART) SEP 32

A new era of nuclear test verification, M. Auer, M. K. Prior (ART) SEP 39

Public access (NN) OCT 29

How to deal with climate change, P. A. T. Higgins (ART) OCT 32

Bridging academia and industry the Fraunhofer way (IE) NOV 24

Imaging Earth daily to help humanity (IE) NOV 27

Diverse suggestions for improving physics teaching, R. E. Megginson; W. DeBuvtz; S. Hassani; P. Hansen; A. Slepkov; L. Aguilar, G. Walton, C. Wieman (FOR) DEC 10

Fusion breeding for sustainable carbon-free power, W. Manheimer (FOR) DEC 13

Emphasis on short-term gains worries Australia's science community (IE) DEC 24

Fractures are widening on nonproliferation treaty (IE) DEC 27

Prisoner of conscience to get retrial in Iran (IE) DEC 30

From the archives: Design for acoustics, L. L. Beranek (ART) DEC 52

Society of Physics Students

See Scientific societies

Society of Rheology

See Scientific societies

Sociology of science

See also Education; Employment and careers; History and philosophy; Publishing, media, and the press; Science policy and politics; Society and physics

A lesson in defining "extinct," P. Asimow (FOR) JAN 8

State science academies seek their niche (IE) JAN 22

Commentary: Flattening the astronomy world, M. Mountain (FOR) FEB 8

Black-box electronics and passive learning, B. Battaile; K. Hess (FOR) FEB 11

Particle Fever: A look behind the scenes of the Higgs discovery (IE) FEB 22

Europe launches newest R&D framework program (IE) MAR 26

Physics opens doors (NN) MAR 30

Taiwan's science miracle, T. Feder (ART) MAR 45; *correction* MAY 9

Notes on teaching physics to biologists, W. John; P. Murugesan; M. Rorvig; D. Meredith, J. Redish (FOR) APR 12

Graduate demographics in the US (NN) APR 27

Students in the sciences need to learn entrepreneurial skills, M. D. Levenson; A. Peekna; D. Arion (FOR) MAY 8

Weighing in on the cost of research papers, G. Paulikas (FOR) MAY 9

Psychological insights for improved physics teaching, L. Aguilar, G. Walton, C. Wieman (ART) MAY 43

Commentary: Massive open online courses and the future of education, H. F. Dylla (FOR) JUN 8

Serving science or serving politics, V. Lukin (FOR) JUN 10

Venerable Virginia science academy welcomes new one, D. A. O'Dell (FOR) JUN 12

Readers' perspectives highlight vagaries of progress in science, D. Soeder; M. Dubs (FOR) JUL 8

Citation counts and indices: Beware of bad data, C. Will (FOR) AUG 10

UN's Basic Space Science Initiative: A follow-up report, H. J. Haubold (FOR) SEP 9

Bridge programs boost PhD enrollment among underrepresented minorities (IE) SEP 24

From Beijing to Kigali, ICTP makes itself at home in the developing world (IE) OCT 20

Public access (NN) OCT 29

Physicists offer a different approach to cancer research (IE) NOV 22

Bridging academia and industry the Fraunhofer way (IE) NOV 24

Commentary: BICEP2's *B* modes: Big Bang or dust? M. Livio, M. Kamionkowski (FOR) DEC 8

Diverse suggestions for improving physics teaching, R. E. Megginson; W. DeBuvtz; S. Hassani; P. Hansen; A. Slepkov; L. Aguilar, G. Walton, C. Wieman (FOR) DEC 10

Emphasis on short-term gains worries Australia's science community (IE) DEC 24

Space and planetary science

See also Astronomy and astrophysics; Atmospheric science; Earth science; Plasmas and fusion

Alternative models of the Moon's origin, D. U. Wise (FOR) JAN 8

The search for magnetic reconnection in solar flares, P. Foukal (FOR) JAN 8

Earth-size exoplanets in habitable orbits are common (SD) JAN 10

Explaining our two-faced Moon (SD) JAN 14

Many planets, similar tropopauses (UP) FEB 18

Space station research to get new lease on life (IE) MAR 22

Warm planets orbiting cool stars, J. A. Johnson (ART) MAR 31

Early sightings of comets near the Sun, J. M. Vaquero (FOR) MAY 9

ESA–CERN handshake (NN) MAY 22

Early history of Arecibo Observatory, P. H. Carr; R. M. Dowe Jr; D. Altschuler, C. Salter (FOR) JUN 11

Thermal cycling breaks down asteroid boulders (SD) JUN 16

Model dynamo may solve Mercury mystery (SD) AUG 14

UN's Basic Space Science Initiative: A follow-up report, H. J. Haubold (FOR) SEP 9

Chelyabinsk: Portrait of an asteroid airburst, D. A. Kring, M. Boslough (ART) SEP 32

Energetic flares in the search for habitable exoplanets, R. Mielbrecht; J. A. Johnson (FOR) OCT 10

Captured cosmic dust may have interstellar origins (SD) OCT 12; *correction* NOV 10

Europa may host a system of tectonic plates (SD) NOV 14

Imaging Earth daily to help humanity (IE) NOV 27

Space, nuclear trade eyed at US–India summit (IE) NOV 29

Making the Moon, D. J. Stevenson (ART) NOV 32

The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

Statistical physics and thermodynamics

See also Classical mechanics and electromagnetism; Theory and mathematical physics

The math behind the scene of the crime, M. B. Short (QS) JAN 58

Notes on the glass-forming ability of bulk metallic glasses, J. Liu; J. Schroers (FOR) FEB 10

A new angle on complex dynamics (SD) FEB 17

Noninteracting quantum gas cools when diluted (UP) FEB 18

Capturing the chaos of running (UP) FEB 19

Bacterial decision making, J. Kondek (ART) FEB 31

A fruit-fly gene network may be tuned to a critical point (SD) APR 19

Mimicking cell mechanics (BS) MAY 76

Simple compound manifests record-high thermoelectric performance (SD) JUN 14

Thermal cycling breaks down asteroid boulders (SD) JUN 16

From the archives: Analyzing atmospheric behavior, H. Panofsky (ART) JUN 38

Visualizing many-body dynamics (BS) JUN 68

Heat under the microscope, I. Maasilta, A. J. Minnich (ART) AUG 27

Engineering Maxwell's demon, Z. Lu, D. Mandal, C. Jarzynski (QS) AUG 60

A battery material charges via an unexpected mechanism (SD) SEP 11

Controlling a tipping point (UP) SEP 17

What we know and don't know about tornado formation, P. Markowski, Y. Richardson (ART) SEP 26

Modeling a cell in an external electric field, F. X. Hart (FOR) OCT 11

Emergent aerodynamics in wind farms, J. O. Dabiri (QS) OCT 66

Collaboration unlocks self-replicating crack patterns (SD) NOV 18

Cracking mud, freezing dirt, and breaking rocks, L. Goehring, S. W. Morris (ART) NOV 39

Squeezing quantum noise, S. Dwyer (QS) NOV 72

Spontaneous fluctuations in a ferromagnetic film (UP) DEC 22

Superconductivity and superfluidity

See Condensed-matter physics; Quantum physics

Surfaces and thin films

See Condensed-matter physics; Materials science

Synchrotron radiation

See Biological physics; Condensed-matter physics; Crystallography; Facilities and laboratories

Technology and engineering

See also Computers and computational physics; Industry and physics; Instrumentation and techniques

Microphones step up to the plate (UP) JAN 16

Black-box electronics and passive learning, B. Battaille, K. Hess (FOR) FEB 11

High-speed nanomaterial synthesis and discovery (UP) FEB 19

Taking stock of the nanotechnology consumer products market (IE) FEB 22

A flexible approach to flexible electronics (BS) FEB 68

Digging into the past without a spade (IE) MAR 24

Grid-scale battery research flows with ARPA-E support (IE) APR 24

Better superconducting wires (UP) MAY 17

Readers' perspectives highlight vagaries of progress in science, D. Soeder, M. Dubs (FOR) JUL 8

Wireless power for tiny medical implants (SD) AUG 12

Super fracking, D. L. Turcotte, E. M. Moores, J. B. Rundle (ART) AUG 34

3D printing, inspired by wood (BS) AUG 68

White House offers encouragement for cyberphysical systems (IE) SEP 20

Report urges more planning to cope with Fukushima-like event (IE) SEP 22

DARPA looks beyond GPS for positioning, navigating, and timing (IE) OCT 23

Atom-like crystal defects: From quantum computers to biological sensors, L. Childress, R. Walsworth, M. Lukin (ART) OCT 38

Emergent aerodynamics in wind farms, J. O. Dabiri (QS) OCT 66

Collaboration unlocks self-replicating crack patterns (SD) NOV 18

Imaging Earth daily to help humanity (IE) NOV 27

Where bone meets implant (BS) NOV 96

Nobel Prize in Physics recognizes research leading to high-brightness blue LEDs (SD) DEC 14

Reversed diffraction in bio-inspired photonic materials (UP) DEC 23

A smart wall for cell phones and tablets (UP) DEC 23

Big data goes high-speed across the Atlantic (IE) DEC 29

The Deep Space Network at 50, J. Lazio, L. Deutsch (ART) DEC 31

Top-down nanomanufacturing, M. Imboden, D. Bishop (ART) DEC 45

From the archives: Design for acoustics, L. L. Beranek (ART) DEC 52

Theory and mathematical physics

See also Computers and computational physics

Bohr's molecular model, a century later, A. Svidzinsky, M. Scully, D. Herschbach (ART) JAN 33

The math behind the scene of the crime, M. B. Short (QS) JAN 58

A new angle on complex dynamics (SD) FEB 17

Revolutionary physics in reactionary Argentina, W. Bietenholz, L. Prado (ART) FEB 38

Commentary: What I think about Now, N. D. Mermin (FOR) MAR 8

Early chaos theory, D. Ruelle; D. Shepelyansky; A. E. Motter, D. K. Campbell (FOR) MAR 9

Time, laws, and the future of cosmology, L. Smolin (ART) MAR 38

A final note on the existence of event horizons, G. Chapline; S. B. Giddings (FOR) JUN 10

From the archives: Analyzing atmospheric behavior, H. Panofsky (ART) JUN 38

Bohr's molecular model and the melding of classical and quantum mechanics, M. Y. Amusia; L. Mlodinow; P. Grujic; A. Svidzinsky, M. Scully, D. Herschbach (FOR) AUG 8

Charged polymers form unusual nanostructures (SD) AUG 16

The Casimir force in one dimension (UP) AUG 18

Engineering Maxwell's demon, Z. Lu, D. Mandal, C. Jarzynski (QS) AUG 60

Classical and quantum framing of the Now, B. K. Ridley; B. Tatian; J. B. Hartle; N. D. Mermin (FOR) SEP 8

Emergent-function realities, H. Cole (FOR) SEP 10

Controlling a tipping point (UP) SEP 17

Exotic particles with four or more quarks, S. L. Olsen (QS) SEP 56

Black holes in cosmological natural selection, P. Sorensen; J. Winkler; L. Smolin (FOR) OCT 8

From Beijing to Kigali, ICTP makes itself at home in the developing world (IE) OCT 20

Quantum Darwinism, classical reality, and the randomness of quantum jumps, W. H. Zurek (ART) OCT 44

The conceptual origins of Maxwell's equations and gauge theory, C. N. Yang (ART) NOV 45

Thermodynamics

See Statistical physics and thermodynamics

Underrepresented groups in physics

See Sociology of science

Universities and colleges

See Education; Science policy and politics; Society and physics; Sociology of science

US national laboratories and institutes

See Department of Energy; Facilities and laboratories; Funding and budgets

Women in physics

See Sociology of science

X-ray physics

See Astronomy and astrophysics; Biological physics; Crystallography; Medical physics; Microscopy

Books reviewed

Acoustics

Principles of Musical Acoustics, W. M. Hartmann (J. Smedley) SEP 46

Astronomy and astrophysics

Alien Life Imagined: Communicating the Science and Culture of Astrobiology, M. Brake (P. F. Schewe) JUN 49

Astronomical Measurement: A Concise Guide, A. Lawrence (K. Weaver) DEC 58

The Cosmic Cocktail: Three Parts Dark Matter, K. Freese (S. Hossenfelder) SEP 45

The First Galaxies in the Universe, A. Loeb, S. R. Furlanetto (J. Tumlinson) FEB 45

Heart of Darkness: Unraveling the Mysteries of the Invisible Universe, J. P. Ostriker, S. Mitton (J. C. Mather) MAR 53

Probing the Sky with Radio Waves: From Wireless Technology to the Development of Atmospheric Science, C.-P. Yeang (K. Kellermann) AUG 50

Revealing the Heart of the Galaxy: The Milky Way and Its Black Hole, R. H. Sanders (M. Walker) DEC 57

Understanding the Universe: An Inquiry Approach to Astronomy and the Nature of Scientific Research, G. Greenstein (M. C. Diaz) APR 51

Biological and medical physics

Biophysics: Searching for Principles, W. Bialek (S. J. Hagen) FEB 47

Condensed-matter physics

Polarons, D. Emin (J. T. Devreese) OCT 54

Superconducting State: Mechanisms and Properties, V. Z. Kresin, H. Morawitz, S. A. Wolf (Y. Galperin) JUN 50

Cosmology and relativity

A General Relativity Workbook, T. A. Moore (O. Sarbach) MAY 54

Heart of Darkness: Unraveling the Mysteries of the Invisible Universe, J. P. Ostriker, S. Mitton (J. C. Mather) MAR 53

In Search of the True Universe: The Tools, Shaping, and Cost of Cosmological Thought, M. Harwit (R. Oppenheimer) OCT 54

Trespassing on Einstein's Lawn: A Father, a Daughter, the Meaning of Nothing, and the Beginning of Everything, A. Geffer (C. Orzel) MAY 52

Device physics

Understanding LED Illumination, M. N. Khan (M. Siminovich) JUL 50

Fluids

The Science of Ocean Waves: Ripples, Tsunamis, and Stormy Seas, J. B. Zirker (A. Babanin) OCT 52

Geophysics

The Science of Ocean Waves: Ripples, Tsunamis, and Stormy Seas, J. B. Zirker (A. Babanin) OCT 52

History and philosophy

The Age of Radiance: The Epic Rise and Dramatic Fall of the Atomic Era, C. Nelson (A. Saperstein) SEP 45

Beyond the God Particle, L. Lederman, C. Hill (M. E. Peskin) JUL 49

Buried Glory: Portraits of Soviet Scientists, I. Hargittai (A. Kojevnikov) AUG 47

Churchill's Bomb: How the United States Overtook Britain in the First Nuclear Arms Race, G. Farnelo (B. Wilson) NOV 52

Command and Control: Nuclear Weapons, the Damascus Accident, and the Illusion of Safety, E. Schlosser (A. Wellerstein) APR 48

Cracking the Particle Code of the Universe: The Hunt for the Higgs Boson, J. W. Moffat (M. E. Peskin) JUL 49

The Dawn of Innovation: The First American Industrial Revolution, C. R. Morris (H. F. Dylla) MAY 51

Einstein and the Quantum: The Quest of the Valiant Swabian, A. D. Stone (D. Kleppner) APR 48

In Search of the True Universe: The Tools, Shaping, and Cost of Cosmological Thought, M. Harwit (R. Oppenheimer) OCT 54

Newton and the Origin of Civilization, J. Z. Buchwald, M. Feingold (J. B. Shank) FEB 44

Our Mathematical Universe: My Quest for the Ultimate Nature of Reality, M. Tegmark (F. Sullivan) JUL 51

The Physics of War: From Arrows to Atoms, B. Parker (K. Crosby) SEP 48

A Piece of the Sun: The Quest for Fusion Energy, D. Clery (D. H. Crandall) MAR 52

Probing the Sky with Radio Waves: From Wireless Technology to the Development of Atmospheric Science, C.-P. Yeang (K. Kellermann) AUG 50

Quantum Computing Since Democritus, S. Aaronson (F. Sullivan) MAR 54

Search for the Ultimate Energy Source: A History of the U.S. Fusion Energy Program, S. O. Dean (D. H. Crandall) MAR 52

Shifting Standards: Experiments in Particle Physics in the Twentieth Century, A. Franklin (P. Halpern) OCT 52

Tesla: Inventor of the Electrical Age, W. B. Carlson (R. Rosenberg) JAN 48

Trespassing on Einstein's Lawn: A Father, a Daughter, the Meaning of Nothing, and the Beginning of Everything, A. Geffer (C. Orzel) MAY 52

Instrumentation and techniques

Quantum Cascade Lasers, J. Faist (I. Vurgaftman) AUG 47

Materials science

Polarons, D. Emin (J. T. Devreese) OCT 54

Nonlinear science and chaos

Spin Glasses and Complexity, D. L. Stein, C. M. Newman (S. Boettcher) JAN 48

Traffic Flow Dynamics: Data, Models and Simulation, M. Treiber, A. Kesting (K. Nishinari) MAR 54

Nuclear physics

The Age of Radiance: The Epic Rise and Dramatic Fall of the Atomic Era, C. Nelson (A. Saperstein) SEP 45

Optics and photonics

Light–Matter Interaction: Physics and Engineering at the Nanoscale, J. Weiner, F. Nunes (L. C. Andreani) MAY 53

Quantum Cascade Lasers, J. Faist (I. Vurgaftman) AUG 47

Understanding LED Illumination, M. N. Khan (M. Siminovich) JUL 50

Particle physics

Beyond the God Particle, L. Lederman, C. Hill (M. E. Peskin) JUL 49

Cracking the Particle Code of the Universe: The Hunt for the Higgs Boson, J. W. Moffat (M. E. Peskin) JUL 49

Gauge Theories of the Strong, Weak, and Electromagnetic Interactions, C. Quigg (R. N. Mohapatra) JUN 50

The Physics of Neutrinos, V. Barger, D. Marfatia, K. Whisnant (R. Z. Funchal) JAN 49

Quantum Field Theory and the Standard Model, M. D. Schwartz (W. Hollik) DEC 57

Shifting Standards: Experiments in Particle Physics in the Twentieth Century, A. Franklin (P. Halpern) OCT 52

Plasmas and fusion

A Piece of the Sun: The Quest for Fusion Energy, D. Clery (D. H. Crandall) MAR 52

Search for the Ultimate Energy Source: A History of the U.S. Fusion Energy Program, S. O. Dean (D. H. Crandall) MAR 52

Popularizations

Alien Life Imagined: Communicating the Science and Culture of Astrobiology, M. Brake (P. F. Schewe) JUN 49

Beyond the God Particle, L. Lederman, C. Hill (M. E. Peskin) JUL 49

The Cosmic Cocktail: Three Parts Dark Matter, K. Freese (S. Hossenfelder) SEP 45

Cracking the Particle Code of the Universe: The Hunt for the Higgs Boson, J. W. Moffat (M. E. Peskin) JUL 49

Five Billion Years of Solitude: The Search for Life Among the Stars, L. Billings (M. Kuchner) DEC 59

Heart of Darkness: Unraveling the Mysteries of the Invisible Universe, J. P. Ostriker, S. Mitton (J. C. Mather) MAR 53

Letters to a Young Scientist, E. O. Wilson (T. Atherton) FEB 46

The Physics of War: From Arrows to Atoms, B. Parker (K. Crosby) SEP 48

Wizards, Aliens, and Starships: Physics and Math in Fantasy and Science Fiction, C. L. Adler (E. Belbruno) NOV 55

Quantum physics

Einstein and the Quantum: The Quest of the Valiant Swabian, A. D. Stone (D. Kleppner) APR 48

Exploring Quantum Mechanics: A Collection of 700+ Solved Problems for Students, Lecturers, and Researchers, V. Galitski, B. Karnakov, V. Kogan, V. Galitski Jr (N. Graham) JUN 51

Quantum Computing Since Democritus, S. Aaronson (F. Sullivan) MAR 54

Quantum Mechanics with Applications to Nanotechnology and Information Science, Y. B. Band, Y. Avishai (L. Bassett) JUL 50

Society and government

Asian Space Race: Rhetoric or Reality? A. Lele (A. Siddiqi) APR 50

Command and Control: Nuclear Weapons, the Damascus Accident, and the Illusion of Safety, E. Schlosser (A. Wellerstein) APR 48

Space and planetary science

Asian Space Race: Rhetoric or Reality? A. Lele (A. Siddiqi) APR 50

Five Billion Years of Solitude: The Search for Life Among the Stars, L. Billings (M. Kuchner) DEC 59

Statistical physics and thermodynamics

Spin Glasses and Complexity, D. L. Stein, C. M. Newman (S. Boettcher) JAN 48

Texts and education

Biophysics: Searching for Principles, W. Bialek (S. J. Hagen) FEB 47

A Course in Mathematical Methods for Physicists, R. L. Herman (T. Hübsch) AUG 49

A Course in Theoretical Physics, P. J. Shepherd (R. V. Gavaï) JAN 50

Exploring Quantum Mechanics: A Collection of 700+ Solved Problems for Students, Lecturers, and Researchers, V. Galitski, B. Karnakov, V. Kogan, V. Galitski Jr (N. Graham) JUN 51

Gauge Theories of the Strong, Weak, and Electromagnetic Interactions, C. Quigg (R. N. Mohapatra) JUN 50

A General Relativity Workbook, T. A. Moore (O. Sarbach) MAY 54

Introduction to Computational Materials Science: Fundamentals to Applications, R. LeSar (S. B. Sinnott) NOV 52

Modern Particle Physics, M. Thomson (A. Leibovich) NOV 54

The Physics of Neutrinos, V. Barger, D. Marfatia, K. Whisnant (R. Z. Funchal) JAN 49

Principles of Musical Acoustics, W. M. Hartmann (J. Smedley) SEP 46

Quantum Cascade Lasers, J. Faist (I. Vurgaftman) AUG 47

Quantum Field Theory and the Standard Model, M. D. Schwartz (W. Hollik) DEC 57

Quantum Mechanics with Applications to Nanotechnology and Information Science, Y. B. Band, Y. Avishai (L. Bassett) JUL 50

Traffic Flow Dynamics: Data, Models and Simulation, M. Treiber, A. Kesting (K. Nishinari) MAR 54

Understanding the Universe: An Inquiry Approach to Astronomy and the Nature of Scientific Research, G. Greenstein (M. C. Diaz) APR 51

Theory and mathematical methods

A Course in Mathematical Methods for Physicists, R. L. Herman (T. Hübsch) AUG 49

A Course in Theoretical Physics, P. J. Shepherd (R. V. Gavaï) JAN 50

Author index

S. J. Adelstein (OB) DEC 68

L. Aguilar *Psychological insights for improved physics teaching* (ART) MAY 43; (FOR) DEC 10

M. Alexanian (FOR) FEB 12

D. Altschuler (FOR) JUN 11

A. Alwan (OB) APR 61

M. Y. Amusia (FOR) AUG 8

L. C. Andreani (BR) MAY 53

L. S. Andrews (OB) MAY 65

D. Arion (FOR) MAY 8

M. Arndt *De Broglie's meter stick: Making measurements with matter waves* (ART) MAY 30

N. W. Ashcroft (OB) OCT 64

P. Asimow (FOR) JAN 8

T. Atherton (BR) FEB 46

M. Auer *A new era of nuclear test verification* (ART) SEP 39

E. Austin *The art and science of forensic meteorology* (ART) JUN 32

A. Babanin (BR) OCT 52

D. Baeriswyl (OB) JUN 60

A. J. Barbero (QS) APR 64; (FOR) NOV 9

L. Bassett (BR) JUL 50

B. Battaile (FOR) FEB 11

E. Belbruno (BR) NOV 55

J. Belden (QS) DEC 70

A. Belenkiy (FOR) JUL 8

G. Benford (FOR) APR 8

J. Benford (FOR) APR 8

D. P. Bennett (OB) MAR 64

L. L. Beranek *From the archives: Design for acoustics* (ART) DEC 52

M. Berry (OB) JUN 60

W. Bietenholz *Revolutionary physics in reactionary Argentina* (ART) FEB 38

T. Birner *The changing width of Earth's tropical belt* (ART) DEC 38

D. Bishop *Top-down nanomanufacturing* (ART) DEC 45

R. D. Blandford (OB) MAY 65

S. Boettcher (BR) JAN 48

M. Boslough *Chelyabinsk: Portrait of an asteroid airburst* (ART) SEP 32

R. J. Budnitz (OB) AUG 58

D. K. Campbell (FOR) MAR 9

D. M. Campbell *Evaluating musical instruments* (ART) APR 35

M. Campbell (FOR) OCT 10

A. B. Carr (OB) JAN 56

P. H. Carr (FOR) JUN 11

J. Carroll (FOR) APR 8

J. Castor (OB) SEP 55

P. Cavagnero *The weight of water* (ART) AUG 41

C. Chang-Hasnain (OB) NOV 66

G. Chapline (FOR) JUN 10

B. Cheng (OB) SEP 55

L. Childress *Atom-like crystal defects: From quantum computers to biological sensors* (ART) OCT 38

H. Cole (FOR) SEP 10

J. M. Colino (QS) APR 64; (FOR) NOV 9

P. S. Corden *Nuclear proliferation and testing: A tale of two treaties* (ART) APR 41; (FOR) NOV 8

D. H. Crandall (BR) MAR 52

K. Crosby (BR) SEP 48

J. O. Dabiri (QS) OCT 66

J. D'Auria (OB) FEB 56

S. M. Davis *The changing width of Earth's tropical belt* (ART) DEC 38

W. DeBuviitz (FOR) DEC 10

S. Deser (OB) DEC 68

L. Deutsch *The Deep Space Network at 50* (ART) DEC 31

A. DeVolpi (FOR) APR 8

J. T. Devreese (BR) OCT 54

M. C. Diaz (BR) APR 51

M.-G. DiBenedetto (OB) APR 61

A. R. Douglass *The Antarctic ozone hole: An update* (ART) JUL 42

R. M. Dowe Jr (FOR) JUN 11

M. Dubs (FOR) JUL 8

E. Dupont (OB) APR 61

- S. Dwyer (QS) NOV 72
H. F. Dylla (BR) MAY 51; (FOR) JUN 8; (OB) NOV 68
M. Espy (QS) JUN 62
T. Feder *Taiwan's science miracle* (ART) MAR 45; *correction* MAY 9
S. Ferrara (OB) NOV 69
P. Foukal (FOR) JAN 8
A. Francowiak (QS) JUL 60
M. Friedlander (OB) JUL 59
J. Frieman *Probing the accelerating universe* (ART) APR 28; *correction* JUL 9
R. J. M. Fry (OB) DEC 68
R. Z. Funchal (BR) JAN 49
S. Funk (QS) JUL 60
Y. Galperin (BR) JUN 50
A. M. Gañán-Calvo (FOR) NOV 9
R. V. Gavai (BR) JAN 50
S. Gezari *The tidal disruption of stars by supermassive black holes* (ART) MAY 37
S. B. Giddings (FOR) JUN 10
L. Goehring *Cracking mud, freezing dirt, and breaking rocks* (ART) NOV 39
C. Gould (OB) MAR 64
N. Graham (BR) JUN 51
J. E. Greene *Organic thin films: From monolayers on liquids to multilayers on solids* (ART) JUN 43
P. Grujic (FOR) AUG 8
D. Haase (OB) MAR 64
C. Haber (QS) MAR 68
D. Hafemeister *Nuclear proliferation and testing: A tale of two treaties* (ART) APR 41; (FOR) NOV 8
M. Hafezi (QS) MAY 68
C. R. Hagen (OB) AUG 57
S. J. Hagen (BR) FEB 47
P. Halpern (BR) OCT 52
P. Hansen (FOR) DEC 10
F. X. Hart (FOR) OCT 11
J. B. Hartle (FOR) SEP 8
S. Hassani (FOR) DEC 10
H. J. Haubold (FOR) SEP 9
D. Herschbach *Bohr's molecular model, a century later* (ART) JAN 33; (FOR) AUG 8
K. Hess (FOR) FEB 11
P. A. T. Higgins *How to deal with climate change* (ART) OCT 32
P. Hildebrand *The art and science of forensic meteorology* (ART) JUN 32
W. Hollik (BR) DEC 57
D. S. B. Hoon *Circulating tumor cells: Cancer's deadly couriers* (ART) FEB 26
J. C. Hopkins (OB) JAN 56
S. Hossenfelder (BR) SEP 45
Q. Hu (OB) APR 61
L. Huang (OB) FEB 57
T. Hübsch (BR) AUG 49
R. Huebener (OB) JAN 56
J. Hunter (QS) JUN 62
R. Hurd (QS) DEC 70
M. Imboden *Top-down nanomanufacturing* (ART) DEC 45
K. K. Irikura (OB) MAY 65
P. Jackson (OB) FEB 56
C. Jarzynski (QS) AUG 60
M. Jeffries (FOR) MAY 8
W. John (FOR) APR 12
J. A. Johnson *Warm planets orbiting cool stars* (ART) MAR 31; (FOR) OCT 10
R. Johnston (FOR) NOV 8
M. H. Kalos (OB) OCT 64
M. Kamionkowski (FOR) DEC 8
K. Kellermann (BR) AUG 50
D. Khavinson (OB) MAR 64
K.-J. Kim (OB) AUG 58
D. Kleppner (BR) APR 48
V. Kogan (OB) JAN 56
A. Kojevnikov (BR) AUG 47
F. Kondev (OB) NOV 66
J. Kondev *Bacterial decision making* (ART) FEB 31
D. A. Kring *Chelyabinsk: Portrait of an asteroid airburst* (ART) SEP 32
M. Kuchner (BR) DEC 59
J. Layman (OB) JUL 59
J. Lazio *The Deep Space Network at 50* (ART) DEC 31
A. Leibovich (BR) NOV 54
M. D. Levenson (FOR) MAY 8
H. Li (OB) SEP 54
C. T. Lim *Circulating tumor cells: Cancer's deadly couriers* (ART) FEB 26
J. Liu (FOR) FEB 10
M. Livio (FOR) JUL 8; (FOR) DEC 8
T. Lokki *Tasting music like wine: Sensory evaluation of concert halls* (ART) JAN 27
Z. Lu (QS) AUG 60
M. Lukin *Atom-like crystal defects: From quantum computers to biological sensors* (ART) OCT 38
V. Lukin (FOR) JUN 10
I. Maasilta *Heat under the microscope* (ART) AUG 27
D. Mandal (QS) AUG 60
W. Manheimer (FOR) DEC 13
P. Markowski *What we know and don't know about tornado formation* (ART) SEP 26
L. Massa (OB) FEB 57
J. C. Mather (BR) MAR 53
R. E. Megginson (FOR) DEC 10
D. Meredith (FOR) APR 12
N. D. Mermin (FOR) MAR 8; (FOR) SEP 8; (OB) OCT 64
R. Mielbrecht (FOR) OCT 10
T. Miller (OB) MAY 64
A. J. Minnich *Heat under the microscope* (ART) AUG 27
C. Misner (OB) DEC 68
L. Mlodinow (FOR) AUG 8
R. N. Mohapatra (BR) JUN 50
E. M. Moores *Super fracking* (ART) AUG 34
S. W. Morris *Cracking mud, freezing dirt, and breaking rocks* (ART) NOV 39
A. E. Motter (FOR) MAR 9
M. Mountain (FOR) FEB 8
P. Murugesan (FOR) APR 12
P. Nath (OB) DEC 68
D. B. Newell *A more fundamental International System of Units* (ART) JUL 35
P. A. Newman *The Antarctic ozone hole: An update* (ART) JUL 42
K. Nishinari (BR) MAR 54
H. Nussbaumer (FOR) JUL 8
D. A. O'Dell (FOR) JUN 12
S. L. Olsen (QS) SEP 56
I. Oppenheim (OB) MAR 66
R. Oppenheimer (BR) OCT 54
J. Orloff (FOR) OCT 10
C. Orzel (BR) MAY 52
J. Overland (FOR) MAY 8
M. Padgett (QS) FEB 58; *correction* JUL 9
H. Panofsky *From the archives: Analyzing atmospheric behavior* (ART) JUN 38
G. Paulikas (FOR) MAY 9
J. Peacock (FOR) JUL 8
A. Peekna (FOR) MAY 8
D. Perovich (FOR) MAY 8
M. E. Peskin (BR) JUL 49
L. Prado *Revolutionary physics in reactionary Argentina* (ART) FEB 38
M. K. Prior *A new era of nuclear test verification* (ART) SEP 39
J. X. Prochaska (OB) OCT 64
R. Prozorov (OB) JAN 56
T. Quinn *The search for Newton's constant* (ART) JUL 27
J. Redish (FOR) APR 12
R. Revelli *The weight of water* (ART) AUG 41
Y. Richardson *What we know and don't know about tornado formation* (ART) SEP 26
B. K. Ridley (FOR) SEP 8
A. Riess (FOR) JUL 8
M. Rorvig (FOR) APR 12
R. Rosenberg (BR) JAN 48
D. Ruelle (FOR) MAR 9
J. B. Rundle *Super fracking* (ART) AUG 34
C. Salter (FOR) JUN 11
A. Saperstein (BR) SEP 45
O. Sarbach (BR) MAY 54
P. F. Schewe (BR) JUN 49
H. Schneider (OB) APR 61
J. Schroers (FOR) FEB 10
L. Schultz (QS) JUN 62
M. Scully *Bohr's molecular model, a century later* (ART) JAN 33; (FOR) AUG 8; (OB) DEC 68
D. J. Seidel *The changing width of Earth's tropical belt* (ART) DEC 38
J. B. Shank (BR) FEB 44
S. Shattuck-Hufnagel (OB) APR 61
D. Shepelyansky (FOR) MAR 9
M. B. Short (QS) JAN 58
A. Siddiqi (BR) APR 50
M. Siminovich (BR) JUL 50
S. B. Sinnott (BR) NOV 52
A. Slepko (FOR) DEC 10
J. Smedley (BR) SEP 46
L. Smolin *Time, laws, and the future of cosmology* (ART) MAR 38; (FOR) OCT 8
D. Soeder (FOR) JUL 8
S. Solomon *The Antarctic ozone hole: An update* (ART) JUL 42
P. Sorensen (FOR) OCT 8
C. Speake *The search for Newton's constant* (ART) JUL 27
A. Spero (FOR) NOV 9
D. J. Stevenson *Making the Moon* (ART) NOV 32
J. H. Stith (OB) MAY 66
J. Stone (OB) SEP 55
A. Stuchbery (OB) NOV 66
F. Sullivan (BR) MAR 54; (BR) JUL 51
A. Svidzinsky *Bohr's molecular model, a century later* (ART) JAN 33; (FOR) AUG 8
J. A. Swegle (FOR) APR 8
F. J. Tapiador (QS) APR 64; (FOR) NOV 9
B. Tatian (FOR) SEP 8
J. M. Taylor (QS) MAY 68
W. E. Thompson (OB) MAY 65
T. Truscott (QS) DEC 70
J. Tumlinson (BR) FEB 45
D. L. Turcotte *Super fracking* (ART) AUG 34
M. S. Turner (OB) MAY 65
D. van Delft *Paul Ehrenfest's final years* (ART) JAN 41
J. M. Vaquero (FOR) MAY 9
D. Vollhardt (OB) JUN 60
F. von Hippel (FOR) APR 8
I. Vurgaftman (BR) AUG 47
M. Walker (BR) DEC 57
P. Walker (OB) NOV 66
R. Walsworth *Atom-like crystal defects: From quantum computers to biological sensors* (ART) OCT 38
G. Walton *Psychological insights for improved physics teaching* (ART) MAY 43; (FOR) DEC 10
S. G. Warren (FOR) MAY 8
M. Way (FOR) JUL 8
K. Weaver (BR) DEC 58
R. Weiss (OB) NOV 68
A. Wellerstein (BR) APR 48
J. C. Wheeler (OB) SEP 54
C. Wieman *Psychological insights for improved physics teaching* (ART) MAY 43; (FOR) DEC 10
M. Wiescher (OB) FEB 56
C. Will (FOR) AUG 10
A. E. Willner (OB) NOV 66
B. Wilson (BR) NOV 52
J. M. Wilson (OB) MAY 66
R. Wilson (FOR) NOV 8
H. Winick (OB) AUG 58
J. Winkler (FOR) OCT 8
D. U. Wise (FOR) JAN 8
D. Wright (FOR) NOV 9
C. N. Yang *The conceptual origins of Maxwell's equations and gauge theory* (ART) NOV 45
A. Yelon (FOR) SEP 9
X.-C. Zhang (OB) APR 61
B. Zuckerman (FOR) JAN 9
W. H. Zurek *Quantum Darwinism, classical reality, and the randomness of quantum jumps* (ART) OCT 44