

Subject Index

A

- Abell 262 (galaxy cluster), 11:71
- Abell 1689 (galaxy cluster), 3:8–9
- Abell 3827 (galaxy cluster), 9:19
- absorption lines (telluric lines), 11:44
- agave plants, 11:60
- Air-Spaced Triplet ED APO, 2:62–63
- Akatsuki spacecraft, 9:20
- Alcor (star), 4:19
- Aldebaran (star), 11:72
- Algol (binary star system), 5:26
- Allwood, Abby, 5:12
- ALMA (Atacama Large Millimeter/submillimeter Array), 5:23
- amateur astronomy
 - advice for beginners, 5:62–63
 - cost of, 8:56–58
 - discovery of exoplanet, 4:19
 - findings of, 8:44–49
 - Granite Gap, 9:60–62
 - interesting teens in, 9:13
 - things to do in bad weather, 11:50–51
 - University of Arizona Astronomy Camp, 12:58
 - White House star party, 2:19
- Amateur Observers' Society of New York (AOS), 6:22
- American Astronomical Society
 - Carl Sagan Medal, 2:19
 - Rossi prize, 6:19
- Andromeda Galaxy (M31)
 - central black hole, 9:19
 - effects of collision with Milky Way, 7:51
 - observing, 12:69
- antimatter, 5:23
- antineutrinos, 10:21
- AOS (Amateur Observers' Society of New York), 6:22
- Aphos (asteroid), 2:22
- Arecibo Observatory, 6:19
- Ares 1-X test vehicle, 2:20
- asteroid belt
 - spacecraft travelling through, 10:50–51
 - why hasn't formed planet, 1:58
- asteroids
 - See also names of specific asteroids*
 - binary, 12:23
 - collisions between, 6:23
 - as Earth satellites, 4:48
 - effect of near-Earth passes, 5:26
 - Trojan, 12:22
 - water ice and carbon-based organic compounds on, 8:22
- astroimaging
 - Ceravolo 300 Astrograph, 8:62–63
 - charge-coupled devices, 6:50–55
 - digital, 2:64
 - high-quality, 9:68

Astronomy Magazine 2010 Index

- selecting cameras, 10:54–57
 - signal-to-noise ratio, 10:68
 - stretching data, 11:62, 12:60
 - ASTRON LOw Frequency ARray (LOFAR), 1:24, 8:22
 - astronauts, 5:23
 - astronomical sketching, 3:15. *See also subjects of sketches by name*
 - astronomy
 - See also* amateur astronomy
 - business of, 6:16
 - changes to during last 400 years, 9:44–47
 - childhood interest in, 1:18, 4:13
 - complaints regarding, 4:16
 - five most important topics in, 3:45–49
 - humor and, 4:56
 - illusions, 3:14
 - mathematical oddities linked to, 7:12
 - myths regarding, 11:56–57
 - naked-eye observations, 4:58–59
 - naming of entities and concepts, 9:12
 - objects that can be observed using large telescopes, 5:64–69
 - observations during 2010, 1:16, supplement
 - observations during 2011–2012, 12:supplement
 - observations in autumn, 8:60–61, 10:52–53
 - observations in summer, 5:70–71
 - observations in winter, 1:64–69
 - observations made from different countries, 2:66
 - outreach and community creation through Internet, 10:15
 - outstanding products, 9:52–59
 - promoting interest in, 6:14
 - promoting outreach, 12:10
 - subjective beauty of space objects, 2:14
 - ten historical hypotheses regarding, 8:32–35
 - top ten stories of 2009, 2:26–33
 - vintage books and guides on, 7:13
 - Astronomy* magazine Out-of-this-World Award, 1:25, 6:22
 - Astronomy Technologies AT6RC (Ritchey Chrétien) telescope, 3:56–57
 - Astroparticle Physics Laboratory, 10:10
 - astrophysics
 - high-energy, 1:13
 - interest in, 5:13
 - interviews with astrophysicists, 12:11
 - Kavli Foundation award winners, 10:21
 - AT6RC (Ritchey Chrétien) telescope, 3:56–57
 - Atacama Large Millimeter/submillimeter Array (ALMA), 5:23
 - aurorae
 - collisions between, 4:22
 - image of, 9:71
 - on Saturn, 12:21
 - AX103S (telescope), 5:74–75
- ## B
- Barber, Mike, 5:78
 - Barger, Amy, 10:10
 - Barnard 164 (dark nebula), 11:70
 - Baryon Oscillation Spectroscopic Survey (BOSS), 2:21

Astronomy Magazine 2010 Index

BD +60°2522 (Wolf-Rayet star), 4:10–11
Beehive Cluster (M44; NGC 2632), 6:69
Beta Pictoris b (exoplanet), 10:24
Betelgeuse (star), 5:25
Big Bang, 3:46
binary asteroids, 12:23
binary quasars, 6:21
binary star systems
 dust surrounding, 12:25
 observing, 8:13
 planet-forming disk around, 3:20
 smallest-known and fastest-orbiting, 7:19
 supernovae, 5:26
Binocular Photon Machine, 6:58–59
Birriel, Jennifer, 10:11
Bishop, Janice, 3:11
black holes
 at center of Andromeda galaxy, 9:19
 at center of Milky Way, 4:48
 co-existence of large galaxies and, 5:28–33
 dark matter in gravity field of, 12:51
 determining density of dark matter, 7:18
 effect of galactic collisions on, 7:21, 10:21
 emission jets from, 1:58, 11:19, 12:24
 energy released by supermassive, 8:18
 farthest known, 5:23
 formation of galaxies, 3:18
 of intermediate mass, 5:25
 outside galaxy's central point, 9:18, 23
 pairs of supermassive, 5:26
 retrograde spin of supermassive, 6:20
 shifting axis of, 11:17
 size of if universe compressed into one, 8:50–51
 study of gravity surrounding, 2:19
Blackeye Galaxy (M64), 3:68
Blandford, Roger, 4:13
Blue Horsehead Nebula (IC 4592), 1:82
Blue Oyster (NGC 1501) (planetary nebula), 6:70
blue straggler stars, 4:23
Bok telescope, 7:52–53
Boogie Man (LDN 1622) (dark nebula), 7:70
BOSS (Baryon Oscillation Spectroscopic Survey), 2:21
The Box (galaxy cluster), 11:71
brown dwarf stars
 coolest known, 5:23
 formation of, 3:20
 planet-like companion of, 8:19
Bubble Nebula (NGC 7635), 4:10–11
buckyballs, 11:17
Burr, Jim, 3:62

C

Caldwell 20 (NGC 7000; North America Nebula), 7:62–64
California Nebula (NGC 1499), 5:86, 11:72
Canon EOS 5D Mark II camera, 10:62–63

Astronomy Magazine 2010 Index

- carbon, 8:22, 11:17
- Carl Sagan Medal, 2:19
- CARMA (Combined Array for Research in Millimeter-wave Astronomy), 8:70
- Carnegie Observatories, California, 1:13
- Cassini spacecraft
 - See also* Saturn
 - extension of mission, 6:23
 - flybys of Enceladus, 3:16, 6:22, 8:18
 - top 10 discoveries, 11:28–29
- Cassiopeia A supernova remnant, 2:19
- Cat's Paw Nebula (NGC 6334), 8:19, 11:71
- CCD (charge coupled devices), 2:22
- CCD (charge-coupled devices), 6:50–55
- Centaurus A galaxy (NGC 5128), 3:68
- Ceravolo 300 Astrograph, 8:62–63
- CERN (European Organization for Nuclear Research). *See* Large Hadron Collider (LHC)
- CG4 (cometary globular), 3:71
- Chandra X-ray Observatory
 - discovery of galaxy cluster, 2:18
 - image of center of Milky Way, 1:20
 - ten years of operation, 4:20
- Chandrasekhar limit, 7:21
- charge coupled devices (CCD), 2:22
- charge-coupled devices (CCD), 6:50–55
- Cluster spacecraft, 8:19
- CMB. *See* cosmic microwave background (CMB)
- Combined Array for Research in Millimeter-wave Astronomy (CARMA), 8:70
- Comet 17P/Holmes, 1:23
- Comet 81P/Wild 2, 9:70
- Comet 147P/Kushida-Muramatsu, 1:26
- Comet C/1995 O1 (Hale-Bopp), 12:supplement
- Comet C/2006 P1 (McNaught), 8:18
- Comet C/2009 P1 (Garradd), 12:supplement
- cometary planets, 11:18
- comets
 - See also names of specific comets*
 - eccentric orbits of, 1:59
 - origin of, 10:20
- Constellation program, 5:23
- constellations, observing. *See also names of specific constellations*
- CoRoT (COncvection ROtation and planetary Transits) space telescope
 - discovery of exoplanet, 7:18
 - extension of, 2:19
- CoRoT-7b (exoplanet)
 - discovery of, 5:25
 - largest rocky exoplanet, 2:50
 - surface and density of, 1:26
- CoRoT-9b (exoplanet), 7:18
- cosmic microwave background (CMB)
 - detecting gravitational waves, 9:19
 - measuring dark matter, dark energy, and normal matter, 4:49
- cosmic rays
 - relative intensity of, 11:17
 - sources of, 2:28
- cosmology, developments in, 3:10
- counterglow (gegenschein), 3:69

Astronomy Magazine 2010 Index

Crab Nebula (M1), 12:16
Crescent Nebula (NGC 6888), 3:70
Currie, Thayne, 4:12
Cygnus X-1 (black hole), 6:56–57
Cygnus X-3 (microquasar), 3:21

D

dark energy

existence of universe without matter, 1:59
measuring using cosmic microwave background, 4:49
neutrinos and, 8:51
overview of, 2:30–31
questioning existence of, 10:24
survey of, 2:21

dark matter

density of, 7:18
detection device, 12:24
in gravity field of black holes, 12:51
measuring using cosmic microwave background, 4:49
questioning existence of, 10:24
shape of, 5:23
theory regarding, 3:46

Dawn spacecraft, 10:21

Deimos (moon of Mars), 4:19

DI Herculis (binary star), 1:26

Dodelson, Scott, 3:10

Double Cluster (Great Cluster of Perseus; NGC 869 and NGC 884), 10:58–60, 12:18–19

double stars, observing, 8:13. *See also* binary star systems

Dumbbell Nebula (M27; NGC 6853), 8:69

E

Earth

amino acids embedded in salty crusts, 1:27
effects of changing solar energy levels on, 12:21
extraterrestrial sources of minerals and precious metals, 2:24
possible asteroid collisions with, 2:22
reversal of magnetic poles, 7:50
temperature of early oceans, 3:20
warmest year and decade, 5:25

earthquakes, 6:22

Eberswalde Crater (feature on Mars), 3:20

eclipses

during 2011, 12:supplement
Epsilon Aurigae, 8:19
lunar, 12:14
solar, 3:52–54, 10:70–71, 11:52–53, 54–55, 12:50–51, 70

84447 (Jeffkanipe asteroid), 3:17

emission nebulae. *See names of specific emission nebulae*

ENAs (energetic neutral atoms), 2:19

Enceladus (moon of Saturn), 3:16, 6:22, 8:18

energetic neutral atoms (ENAs), 2:19

Epsilon Aurigae (star)

eclipses of, 8:19
observing in 2011, 12:supplement

ESA (European Space Agency), 6:19. *See also names of specific spacecraft and missions*

Astronomy Magazine 2010 Index

- ETX-LS telescope, 4:54–55
- Europa (moon of Jupiter), 2:24
- European Organization for Nuclear Research (CERN). *See* Large Hadron Collider (LHC)
- European Southern Observatory
 - Extremely Large Telescope, 8:22
 - HARPS spectrograph, 1:26, 2:18
 - Very Large Telescope, 7:20
 - VISTA telescope, 4:21
- European Space Agency (ESA), 6:19. *See also names of specific spacecraft and missions*
- exoplanets. *See* extrasolar planets (exoplanets)
- exozodiacal dust, 8:23
- Explore Scientific Air-Spaced Triplet ED APO, 2:62–63
- extrasolar planets (exoplanets)
 - calculating mass of, 10:26
 - capture of direct spectrum of, 5:26
 - in close proximity, 11:21
 - cometary, 11:18
 - commonness of, 8:19
 - detection by gravitational deviation of light, 11:19
 - detection with radio telescopes, 6:49
 - detection with vortex coronagraph, 8:19
 - discovered by Kepler spacecraft, 5:23
 - earthlike, 10:28–33
 - interest in researching, 10:11
 - lacking methane, 8:20
 - largest rocky, 2:50
 - movement of, 10:24
 - number discovered reaches 400, 2:18
 - orbiting Sun-like stars, 4:18
 - orbits and habitability of, 9:19
 - recent discoveries of, 2:33, 4:18, 10:24, 12:21, 22
 - rotation of, 8:22
 - second smallest, 5:23
 - steep-angled orbits, 9:21
 - surrounded by dust, 8:24–29
 - temperate, Jupiter-like, 7:18
 - weather conditions on, 2:34–39
- extraterrestrial life, 4:24–29, 5:34–39

F

- Fermi Gamma-ray Space Telescope
 - brightest source in the gamma-ray sky, 4:19
 - gamma rays detected in supernova remnants, 6:22
 - millisecond pulsars, 5:23
 - overview of, 2:30–31, 3:24–29
- filters, visual versus imaging, 9:49
- 51 Ophiuchi (star), 1:24
- Fornax Dwarf, 5:87
- Fornax supercluster, 1:60–63
- Freedman, Wendy, 1:12

G

- galaxies
 - See also names of specific galaxies*
 - collisions between, 7:21, 10:21, 11:16

Astronomy Magazine 2010 Index

- computer algorithm for classifying, 9:22
- determining age of, 10:51
- evolution of, 1:12
- formation of, 3:18, 47, 7:22
- interest in researching, 10:10
- mergers of, 3:51
- oldest, 3:16
- revealing previously unseen, 7:20
- star formation in, 7:19
- galaxy clusters
 - See also names of specific galaxy clusters*
 - dark flow of, 7:22
 - most distant discovered, 9:22
- galaxy pairs, observing, 2:58–61
- Galaxy Zoo, 3:17, 9:30–35
- Galloway Forest Park, Scotland, 3:17
- gamma rays
 - emitted from microquasar, 3:21
 - emitted from novae, 12:21
 - emitted from starburst galaxies, 3:16
 - history of search for, 3:25, 27, 29
- gamma-ray bursts (GRBs)
 - blinding Swift observatory, 11:20
 - possibly initiated by magnetic fields, 4:20
 - record-breaking, 2:27
 - study of, 10:10
- Ganymede (moon of Jupiter), 1:26
- Garradd (Comet C/2009 P1), 12:supplement
- gas clouds, 2:21, 9:20, 10:21
- gegenschein (counterglow), 3:69
- Gehrels, Neil, 10:10
- Gemini (constellation), 2:80
- Geminid meteors, 5:88
- GJ 436b (exoplanet), 8:19
- GJ 1214b (exoplanet), 4:19
- globular clusters
 - See also names of specific globular clusters*
 - evolution of, 6:48
 - formation of, 1:59
 - origin of, 3:19
- Goodman, Alyssa, 4:12
- Gordon, Bill, 6:19
- Granite Gap, 9:60–62
- gravitational lensing, 5:63, 9:19, 11:20
- gravitational waves, 10:51
- GRBs. *See* gamma-ray bursts (GRBs)
- Great Cluster of Perseus (Double Cluster; NGC 869 and NGC 884), 10:58–60, 12:18–19
- Grigg-Skjellerup comet, 2:22
- Grote Reber Medal, 7:22
- Grundstrom, Erika, 12:10
- Grunsfeld, John, 5:23
- Gum 15 (emission nebula), 1:83

H

- Hale-Bopp (Comet C/1995 O1), 12:supplement

Astronomy Magazine 2010 Index

Hanny's Voorwerp (gas cloud), 10:21
HARPS (High Accuracy Radial velocity Planet Searcher) spectrograph, 1:26, 2:18
Harriot, Thomas, 4:44–47
HAT-P-7b (exoplanet), 3:17
Haumea (dwarf planet), 1:24
Hayabusa spacecraft, 10:21
HD 10180 (star), 12:21
HD 49933 (star), 12:24
HD 96548 (Wolf-Rayet star), 11:70
HD 131488 (star), 5:22
HD 209458b (exoplanet), 10:26, 11:18
HE 0437-5439 (hypervelocity star), 11:17
Head, Jim, 1:13
Heart Nebula, 9:19
Henry, Todd, 5:13
Herschel Space Telescope

- gas clouds in Crux constellation, 2:21
- images captured by, 4:21
- Spitzer Space Telescope versus, 2:51

Herse (moon of Jupiter), 2:19
Higgs bosons, 11:17
High Accuracy Radial velocity Planet Searcher (HARPS) spectrograph, 1:26, 2:18
Hind's Variable Nebula (NGC 1555), 1:84
Horsehead nebula, 2:10–11
HR 8799b (exoplanet), 12:21
Hubble Space Telescope

- asteroid collisions, 6:23
- combination of exposures from, 11:45
- deepest visible-light images, 4:18
- detailed view of R136, 4:19
- image of Saturn, 6:19
- images of Pluto, 6:18
- instruments donated to Smithsonian, 3:17
- possibility of attaching to International Space Station, 9:49
- proplyds, 4:23
- ram-pressure stripping observed, 1:25
- smallest Kuiper Belt object, 4:21
- top five science discoveries using, 7:30–35
- upgrade to, 2:32
- Wide Field and Planetary Camera 2, 2:22

Hubble's Variable Nebula (NGC 2261), 2:75

I

Iapetus (moon of Saturn), 4:22
IBEX (Interstellar Boundary Explorer) mission, 2:19, 5:22
IC 348 (open cluster), 5:87
IC 426 (reflection nebula), 8:71
IC 434 (nebula), 2:10–11
IC 1283-4 (nebular region), 4:72
IC 1795 (emission nebula), 3:70
IC 1871 (emission nebula), 4:70
IC 4592 (Blue Horsehead Nebula), 1:82
IC 4605 (reflection nebula), 12:72
IKAROS (Interplanetary Kite-craft Accelerated by Radiation Of the Sun) spacecraft, 9:20
Impey, Chris, 5:12

Astronomy Magazine 2010 Index

infrared telescopes, calibration of, 6:19
International Space Station (ISS), 9:49
International Year of Astronomy (IYA2009), 2:28, 4:57
Interplanetary Kite-craft Accelerated by Radiation Of the Sun (IKAROS) spacecraft, 9:20
Interstellar Boundary Explorer (IBEX) mission, 2:19, 5:22
interstellar dust
 dusty region in Milky Way, 7:21
 origin of water, 8:19
 zodiacal light, 8:22
interstellar gas, 6:19
Io (moon of Jupiter), 3:51
IRAS 13481-6124 (star), 11:19
ISS (International Space Station), 9:49
IYA2009 (International Year of Astronomy), 2:28, 4:57

J

Jackson Hole, Wyoming, 3:60
Jacksonville, Florida, 3:60
James Webb Space Telescope (JWST)
 Near-Infrared Spectrograph tested, 2:22
 overview of, 9:24–29
 passes critical design review, 8:23
 sunshield, 6:19
 testing of camera, 7:19
Jeffkanipe (84447) (asteroid), 3:17
Jewel Box Cluster (NGC 4755), 2:22
JKCS041 (galaxy cluster), 2:18
JMI Telescopes, 3:62
Jupiter
 See also names of moons orbiting
 capture of Comet 147P/Kushida-Muramatsu, 1:26
 collisions with, 2:29, 10:23, 12:50
 features of, 11:12
 image of, 4:71
 observation of moons of, 7:16, 10:16–17
 observing, 9:50–51, 12:supplement
 rain on, 7:22
 South Equatorial Belt, 11:14–15
JWST. *See* James Webb Space Telescope (JWST)

K

Kaler, Jim, 3:10
Kaltenegger, Lisa, 10:11
Kavli Foundation, 10:21
Kavli Institute of Particle Astrophysics and Cosmology (KIPAC), 4:13
KBOs. *See* Kuiper Belt objects (KBOs)
Kepler 9 (star), 12:22
Kepler spacecraft
 extrasolar planets discovered by, 4:18, 5:23
 overview of, 11:22–27
 release of data from, 10:21
killer electrons, 7:22
KIPAC (Kavli Institute of Particle Astrophysics and Cosmology), 4:13
Kitt Peak National Observatory, 8:16
Kriege, Dave, 6:62

Astronomy Magazine 2010 Index

Kuchner, Marc, 12:11
Kuiper Belt, 4:30–35
Kuiper Belt objects (KBOs)
 occultation of star by, 10:24
 smallest, 4:21

L

Lang, Cornelia C., 4:12
Large Binocular Telescope, 10:21
Large Hadron Collider (LHC)
 eclipses particle acceleration record, 3:22
 initiation of proton experiments, 7:22
Large Magellanic Cloud (LMC), 6:30–35, 10:21, 25
Large Synoptic Survey Telescope (LSST), 7:44–49
laser-induced fluorescence emission (L.I.F.E.) imaging, 1:24
Laughlin, Greg, 10:11
LCROSS (Lunar CRater Observation and Sensing Satellite) mission, 2:21
LDN 981 (dark nebula), 10:71
LDN 1622 (Boogie Man) (dark nebula), 7:70
Leonid meteors, 12:supplement
Levy, David H., 9:16
LHA 120-N 11 (N11) (star-forming region), 10:21
LHC. *See* Large Hadron Collider (LHC)
Lhires Lite spectroscope, 1:70–71
life
 extraterrestrial, 4:24–29, 5:34–39
 origin of, 1:27
L.I.F.E. (laser-induced fluorescence emission) imaging, 1:24
light
 deepest visible-light images, 4:18
 detection of exoplanets by gravitational deviation of, 11:19
 travelling from core to surface of Sun, 9:48
 zodiacal, 8:22
light pollution, 10:11
Little Dumbbell Nebula (M76), 8:71
LMC (Large Magellanic Cloud), 6:30–35, 10:21, 25
Lobster Nebula (NGC 6357), 11:71
Local Group of galaxies
 diagram of, 10:34–35
 observing, 2:48–49, 11:46–49
Loeb, Avi, 1:12
LOw Frequency ARray (LOFAR), 1:24, 8:22
LRL 31 (star), 1:20
LRO (Lunar Reconnaissance Orbiter), 8:22. *See also* Moon (Earth's)
LSST (Large Synoptic Survey Telescope), 7:44–49
Lunar CRater Observation and Sensing Satellite (LCROSS) mission, 2:21
lunar eclipses, 12:14, supplement
Lunar Reconnaissance Orbiter (LRO), 8:22. *See also* Moon (Earth's)
Lunokhod 1 (lunar rover), 8:22

M

M1 (Crab Nebula), 12:16
M5 (NGC 5904) (globular cluster), 5:85
M7 (Ptolemy's Cluster), 12:70
M11 (Wild Duck Cluster), 9:69

Astronomy Magazine 2010 Index

- M15 (NGC 7078) (globular cluster), 10:69
- M17 (Omega Nebula), 10:23
- M23 (open cluster), 10:72
- M25 (open cluster), 6:71
- M27 (Dumbbell Nebula), 8:69
- M29 (open cluster), 3:71
- M31. *See* Andromeda Galaxy (M31)
- M42 (Orion Nebula), 1:81
- M44 (Beehive Cluster), 6:69
- M45 (Pleiades) (open cluster), 11:72
- M56 (globular cluster), 8:71
- M57 (Ring Nebula), 7:69
- M64 (Blackeye Galaxy), 3:68
- M65 (galaxy), 4:69
- M66 (galaxy), 4:69
- M74 (spiral galaxy), 4:70
- M76 (Little Dumbbell Nebula), 8:71
- M77 (NGC 1068) (compact galaxy), 11:69
- M83 (Southern Pinwheel Galaxy), 3:22, 9:22
- M87 (elliptical galaxy), 12:24
- M94 (spiral galaxy), 1:83
- M95 (barred spiral galaxy), 8:70
- M104 (Sombrero Galaxy), 5:10–11
- M105 (elliptical galaxy), 10:70
- Magellanic Clouds, 5:25, 6:24–29, 30–35, 10:21, 25
- magnetars, 12:20
- magnetic fields
 - birth of massive stars, 6:19
 - reversal of Earth's, 7:50
- magnetic monopoles, 2:19
- magnetism, 5:16
- MallinCam Hyper Plus video cameras, 7:60–61
- Mandel-Wilson 9 (integrated flux nebula), 2:78–79
- Markarian 205 (quasar), 4:69
- Mars
 - See also names of moons orbiting*
 - ancient humid climate, 1:23
 - clay-carbonate rocks on, 11:17
 - determining goals for exploration of, 1:20
 - global map of, 11:20
 - images of, 9:71
 - largest unexplained feature, 9:19
 - Meridiani Planum, 9:21
 - origin of channels on, 7:19
 - polar cap, 9:18
 - sand dunes, 5:23
 - Sirenum Fossae region, 6:23
 - "swiss cheese" terrain, 2:19
 - water on, 10:22
- Mars Express spacecraft, 6:19, 7:20
- Mars Science Laboratory (MSL), 3:20
- matter, measuring using cosmic microwave background, 4:49
- Max Planck Institute for Radio Astronomy, 4:19
- McNaught (Comet C/2006 P1), 8:18
- Meade ETX-LS telescope, 4:54–55
- MEarth Project, 4:19

Astronomy Magazine 2010 Index

Mercury

- image of with Venus and Saturn, 3:72
- Messenger spacecraft, third flyby, 1:22
- observing in 2011, 12:supplement
- why can't be leftover core of gas giant, 9:48

Meridiani Planum (feature on Mars), 9:21

Messenger spacecraft

- solar flare detected by, 2:23
- third flyby of Mercury, 1:22

meteorites

- collecting, 2:54–57
- effect of on Earth, 8:19
- exhibition of at Tucson Gem and Mineral Show, 7:54–57
- Nullarbor Desert, Western Australia, 1:26
- oldest martian, 8:19

meteors

- collision with Jupiter, 10:23
- Geminids, 5:88
- green color of, 8:50
- Leonids, 12:supplement
- nonlinear trails, 5:20–21
- Quadrantids, 12:supplement

Milky Way Galaxy

- black hole at center of, 4:48
- center of, 2:29
- composite image of center, 3:17
- demonstrating size of, 6:15
- dusty region in, 7:21
- effects of collision with Andromeda, 7:51
- origin of hydrogen gas clouds in, 9:20
- origin of oldest stars in, 10:20
- origin of star clusters in, 6:18
- panoramic image of, 5:41–48
- "Red Region", 9:14–15
- star formation at center of, 4:12
- X-ray image of center, 1:20

millisecond pulsars, 5:23

Mimas (moon of Saturn), 7:18

Montgomery, Michele, 3:11

Moon (Earth's)

- altitude of, 6:48
- color of, 7:51
- images of, 2:77, 8:71, 9:71
- measuring size of, 3:58–59
- observing, 1:72–73, 2:52–53
- O'Neill's Bridge, 7:14–15
- orbit of, 7:50
- possible shrinkage of, 12:24
- size of, 5:18
- temperature of south pole, 1:26
- ten features worthy of observation, 7:58–59
- water on, 2:21, 31, 10:20, 12:23

moons

- See also names of specific moons*
- effect on Earth of more than one, 6:48–49
- sub-moons, 11:44–45

Astronomy Magazine 2010 Index

MSL (Mars Science Laboratory), 3:20
Multiple Mirror Telescope, 12:24
multiverse, 3:51
Murdoch, Steve, 2:68

N

N11 (LHA 120-N 11) (star-forming region), 10:21
naked-eye observations, 4:58–59
NASA (National Aeronautics and Space Administration)
 See also names of specific spacecraft and missions
 Astroparticle Physics Laboratory, 10:10
 budget, 5:23
 new Deputy Associate Administrator for Exploration, 4:22
 Next-Generation Suborbital Researchers Conference, 6:19
 undergraduate science experiments, 4:19
 weather balloon, 7:19
National Science Foundation, grants from, 2:19
nebulae. *See also names of specific nebulae*
Nelson, Kevin, 4:60
Neptune
 observing in 2011, 12:supplement
 simulating gravitational pressure of, 11:17
 Triton (moon), 8:21
 Trojan asteroid within orbit of, 12:22
neutrinos, 8:12, 51, 10:21, 11:17
"neutron capture" process, 5:62
neutron stars, 2:19
New Horizons spacecraft, 7:24–29
Next-Generation Suborbital Researchers Conference, 6:19
NGC 246 (Skull Nebula), 4:71
NGC 253 (Sculptor Galaxy), 1:24, 10:26
NGC 300 (galaxy), 5:23
NGC 660 (spiral galaxy), 5:86
NGC 752 (open cluster), 9:71
NGC 869 (star cluster), 10:58–60, 12:18–19
NGC 884 (star cluster), 10:58–60, 12:18–19
NGC 891 (spiral galaxy), 3:17
NGC 896 (nebula), 3:70
NGC 1068 (M77) (compact galaxy), 11:69
NGC 1073 (galaxy), 11:69
NGC 1333 (emission nebula), 5:87
NGC 1342 (open cluster), 4:71
NGC 1499 (California Nebula), 5:86, 11:72
NGC 1501 (Blue Oyster) (planetary nebula), 6:70
NGC 1528 (star cluster), 12:18–19
NGC 1535 (planetary nebula), 2:75
NGC 1545 (star cluster), 12:18–19
NGC 1555 (Hind's Variable Nebula), 1:84
NGC 1788 (nebula), 7:19
NGC 1931 (nebula), 12:69
NGC 1961 (spiral galaxy), 6:71
NGC 2070 (Tarantula Nebula), 9:21, 12:25
NGC 2158 (open cluster), 1:81
NGC 2261 (Hubble's Variable Nebula), 2:75
NGC 2359 (Thor's Helmet), 2:76

Astronomy Magazine 2010 Index

NGC 2403 (spiral galaxy), 6:69
NGC 2419 (globular cluster), 5:85
NGC 2467 (emission nebula), 2:76, 11:17
NGC 2623 (galaxy), 2:24
NGC 2632 (Beehive Cluster), 6:69
NGC 3511 (spiral galaxy), 1:82
NGC 3513 (spiral galaxy), 1:82
NGC 3603 (star cluster), 6:21, 11:19
NGC 3628 (spiral galaxy), 9:71
NGC 4206 (spiral galaxy), 7:71
NGC 4216 (spiral galaxy), 7:71
NGC 4222 (spiral galaxy), 7:71
NGC 4319 (galaxy), 4:69
NGC 4372 (globular cluster), 3:71
NGC 4402 (galaxy), 1:25
NGC 4449 (dwarf galaxy), 1:10–11
NGC 4522 (galaxy), 1:25
NGC 4535 (spiral galaxy), 2:77
NGC 4755 (Jewel Box Cluster), 2:22
NGC 4911 (spiral galaxy), 12:21
NGC 5128 (Centaurus A galaxy), 3:68
NGC 5408 (galaxy), 3:17
NGC 5560 (galaxy), 2:79
NGC 5566 (galaxy), 2:79
NGC 5569 (galaxy), 2:79
NGC 5904 (M5) (globular cluster), 5:85
NGC 6334 (Cat's Paw Nebula), 8:19, 11:71
NGC 6357 (Lobster Nebula), 11:71
NGC 6720 (Ring Nebula), 7:69
NGC 6726/7 (reflection nebula), 7:69
NGC 6781 (nebulosity), 3:69, 9:69
NGC 6853 (Dumbbell Nebula), 8:69
NGC 6888 (Crescent Nebula), 3:70
NGC 7000 (Caldwell 20; North America Nebula), 7:62–64
NGC 7006 (globular cluster), 8:69
NGC 7039 (open cluster), 1:83
NGC 7048 (planetary nebula), 1:83
NGC 7078 (M15) (globular cluster), 10:69
NGC 7209 (open cluster), 7:71
NGC 7331 (spiral galaxy), 10:69
NGC 7635 (Bubble Nebula), 4:10–11
Night Vision Astronomy Binocular Photon Machine, 6:58–59
Nobel Prize, 2:22
Noel, Noelia, 3:11
North America Nebula (NGC 7000; Caldwell 20), 7:62–64

O

observatories

See also names of specific observatories

Carnegie Observatories, director of, 1:13

world's deepest, 2:19

Obsession Telescopes, 6:62

Olinto, Angela, 5:13

Omega Nebula (M17), 10:23

O'Neill's Bridge (feature on Moon), 7:14–15

Astronomy Magazine 2010 Index

open clusters. *See names of specific open clusters*
Opportunity rover, 9:19
Orion (constellation), 6:71
Orion 8" f/4.0 Newtonian Astrograph Reflector, 11:58–59
Orion Nebula (M42), 1:81
Out-of-this-World Award, 1:25, 6:22
Özel, Feryal, 4:12

P

pair-instability supernovae, 4:21
Palomar globular clusters, 8:52–55
Panoramic Survey Telescope & Rapid Response System (Pan-STARRS), 7:44–49, 10:21
Perna, Rosalba, 1:13
Perseus galaxy cluster, 3:22
PG 1159-035 (white dwarf star), 1:22
Phobos (moon of Mars), 4:19, 6:19, 7:20
Phoenix Lander
 damage to, 9:22
 image of captured from orbit, 3:20
PK 283+25.1 (Southern Owl Nebula) (planetary nebula), 7:70
Planck mission
 beginning of, 1:24
 first all-sky survey, 11:17
 image of dusty region in Milky Way, 7:21
planetary nebulae
 See also names of specific planetary nebulae
 faint, 12:71
 formation of, 1:52–57
planet-forming disks
 around 51 Ophiuchi, 1:24
 around LRL 31, 1:20
 in binary star system, 3:20
planets
 See also names of specific planets
 determining age of, 12:21
 effect on at demise of Sun, 12:51
 "wandering stars", 4:48–49
 why appear colorless, 2:50
PlaneWave CDK17 optical tube assembly, 12:56–57
Pleiades (M45) (open cluster), 11:72
Pluto (dwarf planet)
 historical time line, 7:26–27
 images of, 6:18
 New Horizons spacecraft, 7:24–29
 status as dwarf planet, 10:18
polycyclic aromatic hydrocarbon, 12:21
Prometheus (moon of Saturn), 11:20
protons, size of, 11:17
protoplanetary systems (proplyds), 4:23
protostars, 10:21
Ptolemy's Cluster (M7), 12:70
pulsars
 discovery of isolated, 12:20
 discovery of X-ray, 12:20
 millisecond, 5:23

Astronomy Magazine 2010 Index

properties of, 10:44–49

Q

Quadrantid meteors, 12:supplement

Quantum Scientific Imaging (QSI), 4:60

quasars

binary, 6:21

dust-free, 7:19

formation of, 7:19

gravitational lensing, 11:20

R

R136 (star grouping), 4:19

R136a1 (star), 11:16

radio telescopes, detection of exoplanets with, 6:49

rainbows, 3:14

ram-pressure stripping, 1:25

RCW 19 (nebula), 7:72

RCW 58 (nebula), 11:70

red dwarf stars, 4:19

"Red Region", 9:14–15

red-giant stars, 4:22

reflection nebulae, observing. *See also names of specific reflection nebulae*

relativity, theory of, 6:18

Ring Nebula (M57; NGC 6720), 7:69

ring systems

origin of, 5:63

overview of, 8:30–31

Saturn, 2:24

Ritchey Chrétien (AT6RC) telescope, 3:56–57

Rosetta spacecraft

flyby of 21 Lutetia, 11:18

flyby of Earth, 3:18

Rosette Cloud, 8:23

Rosette Nebula, 8:23

S

Santa Barbara Instrument Group (SBIG), 5:78

satellites, orbits of, 8:51. *See also names of specific satellites*

Saturn

See also names of moons orbiting

aurorae, 12:21

Cassini mission's top ten discoveries, 11:30–35

color asymmetries on moons of, 2:22

dust ring around, 2:24

dynamics between Prometheus and, 11:20

image of, 3:72, 6:19

interest in, 12:11

lightning storm, 1:24

new moon discovered, 2:19

observing in 2011, 12:supplement

simulation of moon formation, 10:25

size of, 5:18

temporary radiation belt, 1:24

SBIG (Santa Barbara Instrument Group), 5:78

Astronomy Magazine 2010 Index

Sculptor Galaxy (NGC 253), 1:24, 10:26
SDO (Solar Dynamics Observatory), 6:20, 8:20
SDSS-III (Sloan Digital Sky Survey III), 2:21
search for extraterrestrial intelligence (SETI), 4:24–29
SETI Institute, 3:11
Sextans A (dwarf irregular galaxy), 12:71
shadow bands, 2:16–17, 12:70
Sharpless 2-24 (molecular cloud), 12:71
Sharpless 2-98 (ring nebula), 5:87
Sharpless 2-129 (emission nebula), 9:70
Sharpless 2-157 (T-rex Nebula), 2:77
Sharpless 2-185 (emission nebula), 5:87
Sharpless 2-240 (supernova remnant), 6:71
Sharpless 2-308 (nebula), 7:71
Shelyak Instruments Lhires Lite spectroscope, 1:70–71
Sirenum Fossae region (feature on Mars), 6:23
Skull Nebula (NGC 246), 4:71
Sloan Digital Sky Survey III (SDSS-III), 2:21
Small Magellanic Cloud (SMC), 5:25, 6:30–35
SN 2002bj (supernova), 3:23
SN 2005E (supernova), 9:23
SN 2007bi (supernova), 4:21
SN 2007if (supernova), 7:21
Soderberg, Alicia, 5:13
SOFIA (Stratospheric Observatory for Infrared Astronomy), 4:19, 9:19
Solar Dynamics Observatory (SDO), 6:20, 8:20
solar eclipses
 during 2011, 12:supplement
 January 15, 2010, 6:70
 July 11, 2010, 3:52–54, 10:70–71, 11:52–53, 54–55, 12:70
 variations in totality length, 12:50–51
solar filters, 1:74
solar flares
 detected by Messenger spacecraft, 2:23
 fast, 12:24
solar system
 age of, 12:21
 effect on planets at demise of Sun, 12:51
 possibility of two earthlike planets in habitable zone, 3:50
 scale and distance of celestial bodies, 5:18
solar wind, effect on atmosphere of Mars, 7:19
Sombrero Galaxy (M104), 5:10–11
Soul Nebula, 9:19
Southern Owl Nebula (PK 283+25.1) (planetary nebula), 7:70
Southern Pinwheel Galaxy (M83), 3:22, 9:22
Space Shuttle, microbes carried into orbit, 3:17
spacecraft
 See also names of specific spacecraft
 five doomed missions, 12:44–49
 travelling through asteroid belt, 10:50–51
spatial dimensions, maximum number of, 6:49
Spider Galaxy (UGC 5829), 10:71
Spilker, Linda, 12:11
spiral galaxies, interaction of four, 6:22. *See also names of specific spiral galaxies*
Spirit rover, 3:17, 5:22
Spitzer Space Telescope

Astronomy Magazine 2010 Index

- Herschel Space Telescope versus, 2:51
- planet-forming disk around LRL 31, 1:20
- star clusters
 - See also names of specific star clusters*
 - in Milky Way galaxy, 6:18
 - super, 2:51
- star parties, 5:76
- starburst galaxies, 1:24, 3:16
- Stardust spacecraft, 6:19
- stars
 - See also names of specific stars*
 - determining age of, 10:51
 - double, 8:13
 - dust disk surrounding, 11:19
 - finding primitive, 6:21
 - formation of, 3:11, 12:26–29
 - formation of biggest, 7:19
 - influence of magnetic fields on birth of massive, 6:19
 - lithium content of, 3:17
 - massive, speeding away from Tarantula Nebula, 9:21
 - Milky Way's oldest, 10:20
 - most massive discovered, 11:16
 - nature of, 6:44–47
 - number of, 2:51
 - observing nearby, 12:52–55
 - observing young, 10:25
 - phenomena similar to that observed on Sun, 3:50
 - rate of formation, 6:23
 - rogue, 7:50–51
 - Star of Bethlehem, 1:34–39
 - starspots, 12:24
 - youngest observed, 10:21
- Stratospheric Observatory for Infrared Astronomy (SOFIA), 4:19, 9:19
- Subaru Telescope, 4:19
- Sun
 - composition of, 12:30–35
 - eclipses, 3:52–54, 6:70
 - effect on planets at demise of, 12:51
 - fate of, 10:50
 - image of, 11:70
 - imaging of corona, 5:23
 - light travelling from core to surface, 9:48
 - observing, 5:72–73
 - prehistoric sunrises, 4:50–53
 - research on, 6:24–29
 - size of, 5:18
 - Solar Dynamics Observatory, 6:20
 - solar flares, 2:23, 12:24
 - solar wind, 7:19
 - sunspots, image of, 1:83
 - techniques developed to study, 9:22
 - unusually long solar minimum, 12:21
- super star clusters, 2:51
- superclusters, 1:28–33, 60–63
- superheavy element 114, 2:18
- supernovae

Astronomy Magazine 2010 Index

See also names of specific supernovae

3-D perspective of, 8:19
binary star systems, 5:26
Chandrasekhar limit, 7:21
Crab Nebula, 12:16
'engine-driven' blasts, 5:24
gamma rays detected in remnants of, 6:22
newly discovered path to creation of, 9:23
research on, 12:10
shapes of leftover remnants of, 4:22
simulation of, 1:24
type Ia, 3:23, 6:19, 11:20
Swift observatory, 11:20

T

Tarantula Nebula (NGC 2070), 9:21, 12:25

Taurus (constellation), 11:72

telescopes

See also names of specific telescopes

calibration of infrared, 6:19
map of fifty giant, 11:28–29
maximum usable magnification, 11:44
preventing freezing, 4:49
selecting, 11:61
solar filters, 1:74

telluric lines (absorption lines), 11:44

Tempel 1 (comet), 6:19

Thirty Meter Telescope Project

China joins, 3:22

India joins, 10:26

Thor's Helmet (NGC 2359), 2:76

3C 196 (bright quasar), 1:24

"365 Days of Astronomy" podcast, 1:24

Titan (moon of Saturn)

changing seasons on, 2:20

chemical analysis of atmosphere, 10:22

confirmation of liquid on, 4:19

fog on, 4:19

formation of organic substances on, 11:20

lake levels on, 11:16

overview of, 3:30–35

transient luminous events (TLE), 6:60–61

T-rex Nebula (Sharpless 2-157), 2:77

Triton (moon of Neptune), 8:21

Trojan asteroids, 12:22

21 Lutetia (asteroid), 11:18

24 Themis (asteroid), 8:22

2008 TC₃ (asteroid), 2:19

25143 Itokawa (asteroid), 10:21

U

UGC 5829 (Spider Galaxy), 10:71

unexplained aerospace phenomena, 4:19

universe

Astronomy Magazine 2010 Index

- age of, 3:48–49, 7:19
- darkness of, 8:50
- endlessness of, 10:14
- estimating mass and energy of, 12:21
- existence of without matter, 1:59
- if physical constants had different values, 11:45
- size of, 3:49
- size of if compressed into one black hole, 8:50–51

University of Arizona Astronomy Camp, 12:58
University of Utah, 3:17
Uranus, 8:14–15, 12:supplement

V

V131 Cygni (star), 10:71
V445 (binary system), 3:17
van den Bergh 6 (reflection nebula), 8:72
van den Bergh 134 (reflection nebula), 2:79
Venus

- image of with Moon, 8:71
- image of with Saturn and Mercury, 3:72
- images of, 6:72
- observing in 2011, 12:supplement
- volcanic activity on, 8:19

Vesta (asteroid), 12:supplement
Visible and Infrared Survey Telescope for Astronomy (VISTA) telescope, 4:21
Vixen AX103S (telescope), 5:74–75

W

W. M. Keck Observatory, 1:24
WASP-12b (exoplanet), 6:21, 9:19
water

- on asteroids, 8:22
- on Mars, 10:22
- on Moon, 2:21, 31, 10:20, 12:23
- origin of, 8:19

Wheeler, J. Craig, 12:10
white dwarf stars

- cooling of, 9:18
- eruptions of helium, 9:19
- pure-helium, 9:19
- simulation of supernovae, 1:24
- special type of, 1:27
- with too much oxygen, 3:20

Wide-field Infrared Survey Explorer (WISE) mission, 4:22, 5:24
Wild Duck Cluster (M11), 9:69
Wilkinson Microwave Anisotropy Probe (WMAP), 10:24
Willson, Lee Anne, 12:10
WISE (Wide-field Infrared Survey Explorer) mission, 4:22, 5:24
WMAP (Wilkinson Microwave Anisotropy Probe), 10:24
wormholes, 9:49

X

XMM-Newton satellite, 4:20
X-ray astronomy, 4:20

Z

Zabludoff, Ann, 1:12
zodiacal light, 8:22

Article Title Index

A

Active galaxy's jets slowing star formation, 12:24
Admiring the Tarantula Nebula's neighbors, 12:25
Alan Rogers wins, 7:22
Alien clusters pervade galaxy, 6:18
Alien worlds colliding, 5:22
All about the Double Cluster, 10:58–10:60
All about the North America Nebula, 7:62–7:64
Amateur telescopes detect new super-Earth, 4:19
Amplify your view of the night sky, 6:58–6:59
And then there were three, 9:23
The Andromeda Galaxy and NGC 1931, 12:69
Another big scope for Chile, 8:22
Answering an age-old question, 7:19
Aphophis-Earth impact chance downgraded, 2:22
Ares makes its maiden flight, 2:20
Asteroid colors change near Earth, 5:26
Astro-businesses: a way of inspiring, 6:16
Astroimager's delight: Canon's EOS 5D Mark II, 10:62–10:63
Astroimaging 101, 2:64
Astronomers directly measure exoplanet mass for first time, 10:26
Astronomers find ribbon at solar system's edge, 2:19
Astronomers gain insight into rejuvenated stars, 4:23
Astronomers see swirling planetary material, 1:20
Astronomers simulate formation of Saturn's small moons, 10:25
Astronomers solve stellar mystery, 3:17
Astronomers study massive star's disk, 11:19
Astronomy announces Out-of-this-World Award winner, 6:22
Astronomy mythbusters, 11:56–11:57
Astronomy tests a hot new spectroscope, 1:70–1:71
Astronomy's 5 big questions, 3:45–3:49
Astronomy's first annual Star Products, 9:52–9:59
Astro-Tech's AT6RC offers great imaging on a budget, 3:56–3:57
Attention-deficit astronomy, 6:14
Axel Mellinger's Milky Way mosaic, 5:41–5:48

B

Back from the dead, 11:14–11:15
Backyard astronomy on a budget, 8:56–8:58
The Beehive and a hot galaxy, 6:69
The best Mars map ever, 11:20
The biggest eyes on the sky, 11:28–11:29
Binary star system's mystery solved, 1:26
A black hole caught in the act, 5:25
Black holes do a waltz, 5:26

Astronomy Magazine 2010 Index

Brown dwarf mystery solved, 3:20
Bursting out all over, 1:10–1:11

C

Camp to the stars, 12:58
Carving out a home for stars, 11:19
Cassini finds more on Enceladus, 6:22
Cassini visits Enceladus twice, 3:16
Cassini's top 10 Saturn system discoveries, 11:30–11:35
Catch Mercury at its own game, 12:supplement
Centaurus A and the Blackeye Galaxy, 3:68
The Ceravolo 300 Astrograph: two scopes in one, 8:62–8:63
Challenge yourself with the Palomar globular clusters, 8:52–8:55
Companion star eclipses pulsar for first time, 12:20
Cool expressions, 9:12
CoRoT discovers new temperate exoplanet, 7:18
Cosmic matter flows, but why?, 7:22
Creating a community, 10:15
Curtains light up, 4:22
Cygnus X-3 emits gamma rays, 3:21

D

Dancing with the galaxies, 2:58–2:61
Darkness over Easter Island, 11:52–11:53
The Daughters of Dawn's Heart, 10:16–10:17
Dave Kriege, 6:62
The dawn of a new era for Vesta, 12:supplement
Deep naked-eye diving, 4:58–4:59
Detailed images of Pluto released, 6:18
Directly imaged planet confirmed, 10:24
Disappearing in a cloud of dust, 5:23
Distant exoplanet with missing methane puzzles scientists, 8:20
Distant giants on the prowl, 12:supplement
Dr. David Levy-Shakespeare, 9:16
Don't hang around here no more, 9:18
Double star delights, 8:13
Double the view, 12:24
'Dropout' method pinpoints oldest galaxies, 3:16
The Dumbbell Nebula and NGC 7006, 8:69
Dust around binary systems may be planetary remains, 12:25

E

Enceladus' wake of plasma bubbles, 8:18
Engaging astronomy's teens, 9:13
Exoplanet seen moving, 10:24
Exoplanet tally tops 400, 2:18
Exoplanets discovered in unprecedented proximity, 11:21
Exoplanets orbit star at various angles, 9:21
Exoplanets' weird orbits force new look at habitability, 9:19
Explore our neighborhood galaxies, 2:48–2:49
Explore Scientific's 5-inch APO combines power and portability, 2:62–2:63
Explore the pulsar menagerie, 10:44–10:49
Exploring the galaxy-black hole connection, 5:28–5:33
Extraordinary eclipse, 12:14
Extremely primitive material found, 2:22

Astronomy Magazine 2010 Index

F

Falling for the Heart and Soul nebulae, 9:19
A famous telescope turns 40, 7:52–7:53
Feast on the winter crab, 12:16
Field of dreams, 5:16
50 years strong: a national observatory to be proud of, 8:16
Find your way through the fall sky, 8:60–8:61
Findings allow for possible life on Titan, 10:22
First global map of Ganymede completed, 1:26
First super-Earths found with Sun-like stars, 4:18
A flare for the dramatic, 2:23
Found: 90 percent of galaxies, 7:20
Found: the biggest star ever, 11:16
Fun observing the Sun, 5:72–5:73

G

Galactic mergers offer a lovely show, 2:24
Galaxies caught in the act, 6:22
Galaxy builder?, 3:18
A gallop through Orion the Hunter, 2:10–2:11
Gamma rays come from novae, too, 12:21
Gamma rays hint at cosmic rays, 6:22
Getting clean images, 9:68
Globular clusters might be galaxy relics, 3:19

H

Heavy elements spied, 3:22
Here comes the Sun -- in high-def, 6:20
Herschel peers into the Eagle's core, 4:21
Herschel reveals details in galaxy's plane, 2:21
A historical perspective, 7:13
Hot rocks ignite collectors' passion, 7:54–7:57
How amateur astronomers are really doing science, 8:44–8:49
How an amateur astronomer captured a black hole scoop, 6:56–6:57
How astronomers probe weather on exoplanets, 2:34–2:39
How astronomers will find another Earth, 10:28–10:33
How astronomy has changed over the past 400 years, 9:44–9:47
How binary asteroids form, 12:23
How do planetary nebulae form?, 1:52–1:57
How five doomed missions triumphed in the end, 12:44–12:49
How many civilizations lurk in the cosmos?, 4:24–4:29
How sky surveys will revolutionize astronomy, 7:44–7:49
How stars form, 12:26–12:29
How to blow a cosmic bubble, 4:10–4:11
How to find planets hidden by dust, 8:24–8:29
How to make a supernova even bigger, 7:21
How to pick a camera for astroimaging, 10:54–10:57
How to start a meteorite collection, 2:54–2:57
How we'll explore Pluto, 7:24–7:29
Hubble glimpses most-distant galaxies, 4:18
Hubble views distorted galaxies, 1:25
Hubble views stellar nursery, 10:21
Hubble's top 5 science discoveries, 7:30–7:35
Hubble's Variable Nebula and NGC 1535, 2:75

Astronomy Magazine 2010 Index

Hunting a rare meteorite, 1:26

I

Iapetus' shading explained, 4:22
Imaging prehistoric sunrises, 4:50–4:53
Inside our home supercluster, 10:34–10:35
Is the IBEX ribbon a reflection?, 5:22
Is the Moon shrinking?, 12:24
Is the Sun an oddball star?, 6:24–6:29
It wasn't there, 3:14
It's a planet! It's a comet! It's... both?, 11:18

J

Japan on track for Venus, 9:20
Jewels of the Southern Cross, 2:22
Jim Burr, 3:62
Join the CCD revolution, 6:50–6:55
Jupiter reigns all night long, 12:supplement
Jupiter's helium rain might account for little neon, 7:22

K

Kepler mission spies its first planets, 5:23
The Kepler spacecraft's search for other worlds, 11:22–11:27
Kevin Nelson, 4:60
Killer electrons explained, 7:22
The king of planets captured a comet, 1:26
The king of planets reigns in September, 9:50–9:51
Kuiper Belt object details resolved, 10:24

L

Lake levels recede on Titan, 11:16
LHC breaks energy record, 3:22
Life precursors in Titan's atmosphere, 11:20
The limit of infinity, 10:14
A Lion purrs softly, 12:supplement
Living and breathing astronomy, 1:18
LOL astronomy, 4:56
Looking for bubbles, 12:24
Looking into the Rosette nursery, 8:23
Lost lunar reflector shines on, 8:22
Lunar water estimates increase, 10:20

M

M15 and NGC 7331, 10:69
M77 and NGC 1073, 11:69
Magnetic fields may power gamma-ray bursts, 4:20
Malevolent black holes may be galaxy killers, 8:18
The MallinCam takes great images in seconds, 7:60–7:61
Mars Express sweeps past Phobos, 7:20
Mars may have had a wetter atmosphere in the recent past, 1:23
Meade's LightSwitch technology makes observing a snap, 4:54–4:55
Measure the Moon, 3:58–3:59
A meteor bonanza for early 2011, 12:supplement
Mike Barber, 5:78

Astronomy Magazine 2010 Index

Mimas appears hot in all the wrong places, 7:18
Minerals may have "rained" onto Earth, 2:24
The Moon takes a bite from the Sun, 12:supplement
More exoplanets found orbiting in "wrong" direction, 8:22
Most distant cluster spotted, 9:22
Mysteries of the Magellanic Clouds, 6:30–6:35

N

NASA releases new view of Milky Way center, 1:20
NASA's new eye on the Sun, 8:20
Nature reaches for the stars, 11:60
Near a delta's edge, 3:20
Neptune's new Trojan asteroid, 12:22
New Hubble picture shows off star formation region, 4:19
New kind of star found, 3:20
New kind of supernova provides link to the past, 4:21
The new search for life in the universe, 5:34–5:39
New study questions supernova origins, 6:19
New supernova type detected, 3:23
New techniques to understand the Sun, 9:22
New view of a stellar cradle is born, 6:21
New view of neighboring galaxy dazzles, 10:25
New visions reveal the violent universe, 3:24–3:29
The next great space telescope takes shape, 9:24–9:29
A night at Granite Gap, 9:60–9:62
No jovial refund, 11:12

O

Observatories release great image of our galactic center, 3:17
Observe 10 hot lunar targets, 7:58–7:59
An observing trip in time, 7:16
Odd patterns, dead oxen, 7:12
Old Hickory and old friends, 3:60
Old Hubble data reveals smallest KBO, 4:21
One world, one sky, 2:66
O'Neill's illusion?, 7:14–7:15
Origin of some Milky Way gas clouds discovered, 9:20
The Orion Nebula and NGC 21584, 1:81
Orion's wide-field imaging dream scope, 11:58–11:59
Our bodies, our neutrinos, 8:12
Our chilly Moon, 1:26
Our galaxy in a nutshell, 6:15

P

Peeking through the Stern's dust, 11:17
Peering through Sculptor's dust, 10:26
A permanent IYA, 4:57
Phantasmagoria: transient luminous events, 6:60–6:61
Phoenix fails to rise, 9:22
Phoenix seen in images, 3:20
Photographers, rejoice!, 2:22
Planck captures cold dust, 7:21
Planck sees 13 billion years of light, 11:17
PlaneWave's hot new astroimaging scope, 12:56–12:57
A plethora of proplyds, 4:23

Astronomy Magazine 2010 Index

Pluto's second chance, 10:18
Powerful jets spew from average black hole, 11:19
Prometheus starts giant snowball fight, 11:20
Pulling apart a stellar WASP, 6:21

Q

Quake rocks Earth, 6:22
The quest for cosmic gamma rays, 3:25–3:29
Questioning the dark side, 10:24

R

Readers search for shadow bands, 2:16–2:17
Record-breaking lightning storm observed on Saturn, 1:24
The "Red Region", 9:14–9:15
Research begins in earnest at the LHC, 7:22
Retrograde spin may cause black holes' jets, 6:20
Revealing star births near the Omega Nebula, 10:23
Ring around the planets, 8:30–8:31
The Ring Nebula and NGC 6726/7, 7:69
Rocky exoplanet reveals its secrets, 5:25
Rosetta leaves no stone unturned, 3:18
Rosetta targets ancient Lutetia, 11:18

S

Saturn has enormous outer dust ring, 2:24
Saturn's moons discolored, 2:22
Saturn's wings open wide, 12:supplement
Scientists begin new dark energy survey, 2:21
Scientists discover stellar Rosetta stone, 1:27
Scientists recover asteroid-landing capsule, 10:21
Scientists see distant galaxy cluster, 2:18
Screw-in solar filter hazards, 1:74
Seasons change on Saturn's Titan, 2:20
The secret to "stretching" data, 11:62
Secrets of the Kuiper Belt, 4:30–4:35
See the nearest stars, 12:52–12:55
Seeing Betelgeuse like never before, 5:26
Seeing new details on martian craters, 6:23
A 70-year stellar mystery deepens, 4:22
The shape of things to come, 9:22
Signal-to-noise ratio, 10:68
Simulation shows old stars are outsiders, 10:20
Sketching 101, 3:15
A slice of swiss on Mars, 2:19
A smashing success, 2:21
The solar system in a nutshell, 5:18
The sound of stars, 12:24
A special star party in upstate New York, 5:76
A spectacular predawn meeting, 12:supplement
Spying on our galactic neighbor, 5:25
Spying Saturn's light shows, 6:19
Star birth in M83, 3:22
A star set to explode?, 5:26
Star-forming nebula dangles off Orion's Belt, 7:19
Star's mass indicates it should have been a black hole, 12:20

Astronomy Magazine 2010 Index

Stellar magnet, 5:26
Stellar remnant spins too slowly, 1:22
Steve Murdoch, 2:68
Strange meteors, 5:20–5:21
Strengthening the dark energy case, 11:20
Stretching your data, part 2, 12:60
A stunner in the Coma cluster, 12:21
Summer heat on frigid Triton, 8:21
Supernova imprints reveal type, 4:22

T

Taking a dip in Earth's shadow, 12:supplement
Taking a fresh look, 9:22
A tale of two clusters, 5:85
Target 30 obscure celestial gems, 5:64–5:69
Target 40 wonderful winter sky treats, 1:64–1:69
Teeing up to the sky, 11:61
10 crazy ideas from astronomy's past, 8:32–8:35
10 things to do on a cloudy night, 11:50–11:51
10 tips for Moon watchers, 2:52–2:53
10 top autumn binocular treats, 10:52–10:53
10 top summer binocular treats, 5:70–5:71
Test your vision: The perigee Moon, 1:72–1:73
The third time is not charmed, 1:22
This super-Earth is rocky, 1:26
A tip of the hat, 5:10–5:11
Top 10 stories 2009, 2:26–2:33
Totality crosses Easter Island, 3:52–3:54
Totality washes over the South Seas, 11:54–11:55
Tour the Fornax Supercluster, 1:60–1:63
Tour the Local Group of galaxies, 11:46–11:49
Two galaxy pairs, 4:69
Two great double clusters, 12:18–12:19
Two more for Kepler, 12:22
Two surprising supernovae found, 5:23
2010: a real space odyssey, 1:16

U

The universe's oldest stars, uncovered, 6:21
Unveiling the Cat's Paw, 8:19
Uranus: The Alice in Wonderland world, 8:14–8:15

V

Venus blazes before dawn, 12:supplement
Venus is a volcanic hot spot, 8:19
Venus returns to the evening sky, 12:supplement
View to the past, 3:8–3:9
Vixen's new refractor outperforms its specs, 5:74–5:75
Volcanic ash coats martian crater, 9:21

W

Watch Epsilon Aurigae return to view, 12:supplement
Water and organic compounds found on asteroid, 8:22

Astronomy Magazine 2010 Index

Water on the Red Planet, 10:22
Welcome to the Galaxy Zoo, 9:30–9:35
What galaxy superclusters tell us about the universe, 1:28–1:33
What makes stars tick?, 6:44–6:47
What was the Star of Bethlehem?, 1:34–1:39
What we've learned about a strange new world, 3:30–3:35
What's the Sun made of?, 12:30–12:35
Who was Thomas Harriot?, 4:44–4:47
Why early galaxies formed so many stars, 6:23
Why is Neptune so ugly?, 2:14
Why would anyone quit astronomy?, 4:16
The Wild Duck Cluster and NGC 6781, 9:69
Winds sculpt Mars' north polar cap, 9:18
A winter comet treat, 12:supplement
WISE launches, 4:22
WISE mission on a roll, 5:24

X

X marks the (collision) spot, 6:23
X-ray missions pass 10 years, 4:20
X-Rays blind Swift, 11:20

Y

Young interacting binary caught, 3:20

Z

Zodiacal light source, 8:22

Author Index

A

Andrews, Bill

Admiring the Tarantula Nebula's neighbors, 12:25
Alien clusters pervade galaxy, 6:18
Alien worlds colliding, 5:22
Amateur telescopes detect new super-Earth, 4:19
Astronomers directly measure exoplanet mass for first time, 10:26
Brown dwarf mystery solved, 3:20
Companion star eclipses pulsar for first time, 12:20
CoRoT discovers new temperate exoplanet, 7:18
Dave Kriege, 6:62
Distant exoplanet with missing methane puzzles scientists, 8:20
'Dropout' method pinpoints oldest galaxies, 3:16
Dust around binary systems may be planetary remains, 12:25
Exoplanet seen moving, 10:24
Exoplanets discovered in unprecedented proximity, 11:21
Exoplanets orbit star at various angles, 9:21
Exoplanets' weird orbits force new look at habitability, 9:19
Falling for the Heart and Soul nebulae, 9:19
Findings allow for possible life on Titan, 10:22

Astronomy Magazine 2010 Index

First super-Earths found with Sun-like stars, 4:18
Found: 90 percent of galaxies, 7:20
Galaxies caught in the act, 6:22
Galaxy builder?, 3:18
Iapetus' shading explained, 4:22
Is the Moon shrinking?, 12:24
It's a planet! It's a comet! It's... both?, 11:18
Jim Burr, 3:62
Jupiter's helium rain might account for little neon, 7:22
Kevin Nelson, 4:60
Killer electrons explained, 7:22
LHC breaks energy record, 3:22
Looking into the Rosette nursery, 8:23
Lunar water estimates increase, 10:20
Malevolent black holes may be galaxy killers, 8:18
Mars may have had a wetter atmosphere in the recent past, 1:23
Mike Barber, 5:78
Minerals may have "rained" onto Earth, 2:24
More exoplanets found orbiting in "wrong" direction, 8:22
Mysteries of the Magellanic Clouds, 6:30–35
NASA releases new view of Milky Way center, 1:20
Neptune's new Trojan asteroid, 12:22
New Hubble picture shows off star formation region, 4:19
New kind of supernova provides link to the past, 4:21
New supernova type detected, 3:23
New techniques to understand the Sun, 9:22
New view of neighboring galaxy dazzles, 10:25
Old Hubble data reveals smallest KBO, 4:21
Peeking through the Stern's dust, 11:17
Peering through Sculptor's dust, 10:26
Powerful jets spew from average black hole, 11:19
Pulling apart a stellar WASP, 6:21
Record-breaking lightning storm observed on Saturn, 1:24
Research begins in earnest at the LHC, 7:22
Retrograde spin may cause black holes' jets, 6:20
Revealing star births near the Omega Nebula, 10:23
Ring around the planets, 8:30–31
Rocky exoplanet reveals its secrets, 5:25
Scientists discover stellar Rosetta stone, 1:27
Scientists recover asteroid-landing capsule, 10:21
Seeing Betelgeuse like never before, 5:26
Seeing new details on martian craters, 6:23
Spying on our galactic neighbor, 5:25
Star birth in M83, 3:22
Star-forming nebula dangles off Orion's Belt, 7:19
Taking a fresh look, 9:22
The universe's oldest stars, uncovered, 6:21
Water and organic compounds found on asteroid, 8:22
X marks the (collision) spot, 6:23

B

Bakich, Michael E.

Axel Mellinger's Milky Way mosaic, 5:41–48
Darkness over Easter Island, 11:52–53
Find your way through the fall sky, 8:60–61

Astronomy Magazine 2010 Index

Fun observing the Sun, 5:72–73
Join the CCD revolution, 6:50–55
The king of planets reigns in September, 9:50–51
A night at Granite Gap, 9:60–62
Observe 10 hot lunar targets, 7:58–59
See the nearest stars, 12:52–55
Steve Murdoch, 2:68
Target 30 obscure celestial gems, 5:64–69
Target 40 wonderful winter sky treats, 1:64–69
10 crazy ideas from astronomy's past, 8:32–35
10 things to do on a cloudy night, 11:50–51
10 tips for Moon watchers, 2:52–53
What was the Star of Bethlehem?, 1:34–39

Berman, Bob

Attention-deficit astronomy, 6:14
Cool expressions, 9:12
Extraordinary eclipse, 12:14
Field of dreams, 5:16
It wasn't there, 3:14
The limit of infinity, 10:14
No jovial refund, 11:12
Odd patterns, dead oxen, 7:12
Our bodies, our neutrinos, 8:12
2010: a real space odyssey, 1:16
Why is Neptune so ugly?, 2:14
Why would anyone quit astronomy?, 4:16

C

Carroll, Michael

What we've learned about a strange new world, 3:30–35

Chaple, Glenn

Astroimaging 101, 2:64
Backyard astronomy on a budget, 8:56–58
Creating a community, 10:15
Double star delights, 8:13
Engaging astronomy's teens, 9:13
Feast on the winter crab, 12:16
A historical perspective, 7:13
LOL astronomy, 4:56
Our galaxy in a nutshell, 6:15
Screw-in solar filter hazards, 1:74
Sketching 101, 3:15
The solar system in a nutshell, 5:18
Teeing up to the sky, 11:61
Vixen's new refractor outperforms its specs, 5:74–75

Chyba, Christopher

The new search for life in the universe, 5:34–39

Covington, Michael A.

How to pick a camera for astroimaging, 10:54–57

Cullen, Stephen G.

How an amateur astronomer captured a black hole scoop, 6:56–57

D

Dorminey, Bruce

Is the Sun an oddball star?, 6:24–29

Astronomy Magazine 2010 Index

What galaxy superclusters tell us about the universe, 1:28–33

E

Eicher, David J.

The Andromeda Galaxy and NGC 1931, 12:69

Astronomy's 5 big questions, 3:45–49

The Beehive and a hot galaxy, 6:69

Centaurus A and the Blackeye Galaxy, 3:68

The Dumbbell Nebula and NGC 7006, 8:69

Hot rocks ignite collectors' passion, 7:54–57

How do planetary nebulae form?, 1:52–57

Hubble's Variable Nebula and NGC 1535, 2:75

M15 and NGC 7331, 10:69

M77 and NGC 1073, 11:69

The Orion Nebula and NGC 2158, 1:81

The Ring Nebula and NGC 6726/7, 7:69

A tale of two clusters, 5:85

Two galaxy pairs, 4:69

The Wild Duck Cluster and NGC 6781, 9:69

F

Falk, Dan

Who was Thomas Harriot?, 4:44–47

Fera, Bob

The Ceravolo 300 Astrograph: two scopes in one, 8:62–63

Fischer, Debra

How astronomers will find another Earth, 10:28–33

H

Hallas, Tony

Getting clean images, 9:68

PlaneWave's hot new astroimaging scope, 12:56–57

The secret to "stretching" data, 11:62

Signal-to-noise ratio, 10:68

Stretching your data, part 2, 12:60

Harrington, Phil

Astronomy's first annual Star Products, 9:52–59

Astro-Tech's AT6RC offers great imaging on a budget, 3:56–57

Challenge yourself with the Palomar globular clusters, 8:52–55

Meade's LightSwitch technology makes observing a snap, 4:54–55

10 top autumn binocular treats, 10:52–53

10 top summer binocular treats, 5:70–71

Harris, Joel

Totality crosses Easter Island, 3:52–54

I

Impey, Chris

How astronomy has changed over the past 400 years, 9:44–47

J

Jakiel, Richard

Dancing with the galaxies, 2:58–61

Tour the Fornax Supercluster, 1:60–63

James, C. Renée

Astronomy Magazine 2010 Index

The Kepler spacecraft's search for other worlds, 11:22–27

K

Kaler, Jim

What's the Sun made of?, 12:30–35

Kaspi, Victoria M.

Explore the pulsar menagerie, 10:44–49

Keel, William

Welcome to the Galaxy Zoo, 9:30–35

Kronk, Gary W.

The MallinCam takes great images in seconds, 7:60–61

Kruesi, Liz

A 70-year stellar mystery deepens, 4:22

Active galaxy's jets slowing star formation, 12:24

Apophis-Earth impact chance downgraded, 2:22

Asteroid colors change near Earth, 5:26

Astronomers find ribbon at solar system's edge, 2:19

Astronomers gain insight into rejuvenated stars, 4:23

Astronomers see swirling planetary material, 1:20

Astronomers simulate formation of Saturn's small moons, 10:25

Astronomers solve stellar mystery, 3:17

Astronomers study massive star's disk, 11:19

Binary star system's mystery solved, 1:26

Cassini finds more on Enceladus, 6:22

Cassini visits Enceladus twice, 3:16

Cosmic matter flows, but why?, 7:22

Curtains light up, 4:22

Cygnus X-3 emits gamma rays, 3:21

Detailed images of Pluto released, 6:18

Directly imaged planet confirmed, 10:24

Double the view, 12:24

Extremely primitive material found, 2:22

First global map of Ganymede completed, 1:26

Galactic mergers offer a lovely show, 2:24

Gamma rays come from novae, too, 12:21

Gamma rays hint at cosmic rays, 6:22

Globular clusters might be galaxy relics, 3:19

Heavy elements spied, 3:22

Herschel peers into the Eagle's core, 4:21

Herschel reveals details in galaxy's plane, 2:21

How binary asteroids form, 12:23

How sky surveys will revolutionize astronomy, 7:44–49

How stars form, 12:26–29

Hubble glimpses most-distant galaxies, 4:18

Hubble views distorted galaxies, 1:25

Hubble views stellar nursery, 10:21

Hunting a rare meteorite, 1:26

Is the IBEX ribbon a reflection?, 5:22

The king of planets captured a comet, 1:26

Kuiper Belt object details resolved, 10:24

Life precursors in Titan's atmosphere, 11:20

Looking for bubbles, 12:24

Magnetic fields may power gamma-ray bursts, 4:20

Most distant cluster spotted, 9:22

Near a delta's edge, 3:20

Astronomy Magazine 2010 Index

New kind of star found, 3:20
New study questions supernova origins, 6:19
New view of a stellar cradle is born, 6:21
Observatories release great image of our galactic center, 3:17
Origin of some Milky Way gas clouds discovered, 9:20
Our chilly Moon, 1:26
Phoenix seen in images, 3:20
Photographers, rejoice!, 2:22
Planck captures cold dust, 7:21
Planck sees 13 billion years of light, 11:17
A plethora of proplyds, 4:23
Quake rocks Earth, 6:22
Questioning the dark side, 10:24
Saturn has enormous outer dust ring, 2:24
Saturn's moons discolored, 2:22
Scientists begin new dark energy survey, 2:21
Scientists see distant galaxy cluster, 2:18
Simulation shows old stars are outsiders, 10:20
The sound of stars, 12:24
Spying Saturn's light shows, 6:19
A star set to explode?, 5:26
Star's mass indicates it should have been a black hole, 12:20
Stellar magnet, 5:26
Stellar remnant spins too slowly, 1:22
A stunner in the Coma cluster, 12:21
Supernova imprints reveal type, 4:22
This super-Earth is rocky, 1:26
Top 10 stories 2009, 2:26–33
Two more for Kepler, 12:22
Two surprising supernovae found, 5:23
Water on the Red Planet, 10:22
What makes stars tick?, 6:44–47
Why early galaxies formed so many stars, 6:23
WISE launches, 4:22
WISE mission on a roll, 5:24
X-ray missions pass 10 years, 4:20
Young interacting binary caught, 3:20
Kuchner, Marc J.
 How to find planets hidden by dust, 8:24–29

L

Levy, David H.
 Astro-businesses: a way of inspiring, 6:16
 Camp to the stars, 12:58
 Dr. David Levy-Shakespeare, 9:16
 A famous telescope turns 40, 7:52–53
 50 years strong: a national observatory to be proud of, 8:16
 Living and breathing astronomy, 1:18
 Nature reaches for the stars, 11:60
 An observing trip in time, 7:16
 Old Hickory and old friends, 3:60
 One world, one sky, 2:66
 A permanent IYA, 4:57
 Pluto's second chance, 10:18
 A special star party in upstate New York, 5:76

Astronomy Magazine 2010 Index

Lopes, Rosaly

Cassini's top 10 Saturn system discoveries, 11:30–35

M

McCarthy, Don

A famous telescope turns 40, 7:52–53

N

Nadis, Steve

Exploring the galaxy-black hole connection, 5:28–33

How many civilizations lurk in the cosmos?, 4:24–29

O

O'Meara, Stephen James

Back from the dead, 11:14–15

The Daughters of Dawn's Heart, 10:16–17

Deep naked-eye diving, 4:58–59

Measure the Moon, 3:58–59

O'Neill's illusion?, 7:14–15

Phantasmagoria: transient luminous events, 6:60–61

Readers search for shadow bands, 2:16–17

The "Red Region", 9:14–15

Strange meteors, 5:20–21

Test your vision: The perigee Moon, 1:72–73

Two great double clusters, 12:18–19

Uranus: The Alice in Wonderland world, 8:14–15

P

Polakis, Tom

Tour the Local Group of galaxies, 11:46–49

R

Ratcliffe, Martin

Catch Mercury at its own game, 12:supplement

The dawn of a new era for Vesta, 12:supplement

Distant giants on the prowl, 12:supplement

Jupiter reigns all night long, 12:supplement

A Lion purrs softly, 12:supplement

A meteor bonanza for early 2011, 12:supplement

The Moon takes a bite from the Sun, 12:supplement

Saturn's wings open wide, 12:supplement

A spectacular predawn meeting, 12:supplement

Taking a dip in Earth's shadow, 12:supplement

Venus blazes before dawn, 12:supplement

Venus returns to the evening sky, 12:supplement

Watch Epsilon Aurigae return to view, 12:supplement

A winter comet treat, 12:supplement

Reddy, Francis

New visions reveal the violent universe, **3:24–29**

The next great space telescope takes shape, 9:24–29

Reynolds, Mike

Astroimager's delight: Canon's EOS 5D Mark II, 10:62–63

Astronomy tests a hot new spectroscope, 1:70–71

Explore Scientific's 5-inch APO combines power and portability, 2:62–63

Astronomy Magazine 2010 Index

S

- Schur, Chris
Orion's wide-field imaging dream scope, 11:58–59
- Shubinski, Raymond
All about the Double Cluster, 10:58–60
All about the North America Nebula, 7:62–64
How to start a meteorite collection, 2:54–57
- Skiff, Brian
How amateur astronomers are really doing science, 8:44–49
- Stark, Christopher C.
How to find planets hidden by dust, 8:24–29
- Stern, S. Alan
Secrets of the Kuiper Belt, 4:30–35

T

- Talcott, Richard
Alan Rogers wins, 7:22
Another big scope for Chile, 8:22
Answering an age-old question, 7:19
Ares makes its maiden flight, 2:20
Astronomy mythbusters, 11:56–57
The best Mars map ever, 11:20
The biggest eyes on the sky, 11:28–29
A black hole caught in the act, 5:25
Black holes do a waltz, 5:26
Carving out a home for stars, 11:19
Catch Mercury at its own game, 12:supplement
The dawn of a new era for Vesta, 12:supplement
Disappearing in a cloud of dust, 5:23
Distant giants on the prowl, 12:supplement
Don't hang around here no more, 9:18
Enceladus' wake of plasma bubbles, 8:18
Exoplanet tally tops 400, 2:18
Explore our neighborhood galaxies, 2:48–49
A flare for the dramatic, 2:23
Found: the biggest star ever, 11:16
Here comes the Sun -- in high-def, 6:20
How five doomed missions triumphed in the end, 12:44–49
How to make a supernova even bigger, 7:21
How we'll explore Pluto, 7:24–29
Inside our home supercluster, 10:34–35
Japan on track for Venus, 9:20
Jewels of the Southern Cross, 2:22
Jupiter reigns all night long, 12:supplement
Kepler mission spies its first planets, 5:23
Lake levels recede on Titan, 11:16
A Lion purrs softly, 12:supplement
Lost lunar reflector shines on, 8:22
Mars Express sweeps past Phobos, 7:20
A meteor bonanza for early 2011, 12:supplement
Mimas appears hot in all the wrong places, 7:18
The Moon takes a bite from the Sun, 12:supplement
NASA's new eye on the Sun, 8:20
Phoenix fails to rise, 9:22

Astronomy Magazine 2010 Index

Prometheus starts giant snowball fight, 11:20
Rosetta leaves no stone unturned, 3:18
Rosetta targets ancient Lutetia, 11:18
Saturn's wings open wide, 12:supplement
Seasons change on Saturn's Titan, 2:20
The shape of things to come, 9:22
A slice of swiss on Mars, 2:19
A smashing success, 2:21
A spectacular predawn meeting, 12:supplement
Strengthening the dark energy case, 11:20
Summer heat on frigid Triton, 8:21
Taking a dip in Earth's shadow, 12:supplement
And then there were three, 9:23
The third time is not charmed, 1:22
Totality washes over the South Seas, 11:54–55
Unveiling the Cat's Paw, 8:19
Venus blazes before dawn, 12:supplement
Venus is a volcanic hot spot, 8:19
Venus returns to the evening sky, 12:supplement
Volcanic ash coats martian crater, 9:21
Watch Epsilon Aurigae return to view, 12:supplement
Winds sculpt Mars' north polar cap, 9:18
A winter comet treat, 12:supplement
X-Rays blind Swift, 11:20
Zodiacal light source, 8:22
Trusock, Tom
 Amplify your view of the night sky, 6:58–59

V

Villard, Ray
 Hubble's top 5 science discoveries, 7:30–35

Z

Zimmerman, Robert
 How astronomers probe weather on exoplanets, 2:34–39
Zullo, Frank
 Imaging prehistoric sunrises, 4:50–53