

Hot NEW Products for 2012

Our 14th annual roundup of Hot Products highlights the most intriguing new astronomy gear in the worldwide market.

IF THERE'S A LESSON we've learned from preparing our annual survey of new products entering the astronomical market, it's to expect the unexpected. There are always cycles and trends, but some take us by surprise. We didn't need a crystal ball at the turn of the century to see that digital photography was rapidly replacing film. But the flood of premium short-focus apo refractors that arrived with the new millennium was a bit of an eye-opener.

We had a robust "short list" of candidates for this year's Hot Products, and we were particularly impressed with the innovative items. From Howie Glatter's Parallizer (opposite) to the Telescope Drive Master (page 34) and Meade's LX800 mount with StarLock (pictured here), there are numerous products that address long-standing needs of amateur astronomers in novel ways.

Just because something is new doesn't mean we consider it "hot." For that we need to see an item offering a new technology, providing a simple solution to an old problem, or delivering a remarkable price-to-performance ratio. Whether or not you agree with our picks, we hope you'll enjoy reading about the products that intrigued us the most for 2012.

ROBOTIC GUIDING ▶

There are lots of ways to guide a telescope for astrophotography, but nothing before like Meade's LX800 German equatorial mount with StarLock. Each time you slew to a new target, the mount uses built-in optical systems and digital detectors to automatically center the object and begin precision guiding without the need for an external computer or human intervention. The potential for changing the way that astrophotographers work is enormous. The mount and its heavy-duty tripod sell for \$5,999, and there are package deals available for Meade's new 10-, 12- and 14-inch f/8 ACF catadioptric tube assemblies and its 130-mm f/7 apo refractor.



Meade LX800 mount

U.S. price: \$5,999

Meade Instruments

www.meade.com

PRECISION FOCUSING ▶

We got our first peak at Optec's FastFOCUS system for Celestron Edge HD Schmidt-Cassegrain telescopes at the Northeast Astronomy Forum last April. Because the new telescopes are designed with a fixed optical back focus that leaves little room for a traditional precision focuser at the back of the telescope, Optec developed the FastFOCUS, which moves the secondary mirror by computer control using the company's FocusLynx controller.



FastFOCUS and FocusLynx

U.S. introductory price:
\$1,495
Optec
www.optecinc.com



SkySafari 3

U.S. price: from \$2.99 to \$59.99
Southern Stars
www.southernstars.com

◀ STARRY APP

Here's an all-in-one astronomy app for your iPhone, iPad, and iPod Touch. Available in three versions with databases of differing sizes, *SkySafari 3* is a powerful planetarium program that literally puts the heavens at your fingertips. And with the exception of the most basic version, you can add an optional cable or wireless module and use it to control your Go To telescopes. As the review on page 54 of last month's issue points out, *SkySafari 3* is so complete it may be the only astronomy app many amateurs will need.



Glatter Parallizer

U.S. price: \$45
Howie Glatter
www.collimatorator.com

◀ KEEP IT SQUARE

Eyepieces and imaging systems work best when everything is perfectly square to a telescope's optical axis. But conventional 2-to-1½-inch adapters often tip slightly when tightened into a focuser, and they can also tip whatever is tightened into them. Enter Howie Glatter's Parallizer with a patented design that provides three points of contact on the inner and outer surfaces, keeping everything perfectly square to the telescope's focuser. It's simple, it's clever, and it works. It's a Hot Product!



PINTSIZED PLANET SHOOTER

Smaller than many eyepieces and designed to fit directly into 1¼-inch focusers, the ST-i Planet Camera and Autoguider from SBIG features 16-bit, low-noise performance optimized for video-rate imaging of the Sun, Moon, and planets. Powered by its USB 2.0 computer connection, the ST-i can do double duty as a low-noise autoguider with a built-in mechanical shutter for making automatic dark frames. We wouldn't expect less from the folks who wrote the book on autoguiding amateur telescopes.

ST-i Planet Camera and Autoguider

U.S. price: \$595
Santa Barbara Instrument Group
www.sbig.com



RECORD BREAKER

Everyone marveled when the apparent field of an astronomical eyepiece broke the 80° barrier in 1980. The 100° hurdle was reached in 2008, and in 2010 it was 110°. Now we've hit the 120° mark with a new model from Explore Scientific. Made for 2-inch focusers, the multi-coated 9-mm eyepiece has 13 mm of eye relief and is completely waterproof. Tipping the scales at 3 pounds (1.4 kg), the 120° eyepiece is 40% heavier than the Explore Scientific 20-mm 100° model, which was the previous heavyweight contender in the company's expanding line of eyepieces.



DRIVEN TO PERFECTION ▶

Observers and especially astrophotographers have traveled a long, sometimes tortuous, and often costly road in their quest for telescope drives that track the sky's motion with unerring precision. Now there's a shortcut. The Telescope Drive Master (see our full review in last October's issue, page 62) uses an ultra-high-precision shaft encoder and a compact electronic module to adjust a telescope's drive rate up to five times per second. For many digital-imaging applications, the Telescope Drive Master can eliminate the need for guiding.

Telescope Drive Master
U.S. price: \$1,799.95
Explore Scientific
www.explorescientific.com

◀ MORE THAN JUST DEAD WEIGHT

This is one of those products that simply makes us want to say "Duh!" The PowerWeight from iOptron does double duty as a 7-pound (3.2-kg) counterweight and a rechargeable lead-acid battery pack rated for 12 volts and 8 amp hours. Made for the company's iEQ45 German equatorial mount (reviewed last July, page 60), the PowerWeight can be easily adapted to work with other portable telescope mounts.



▲ FILTERS GALORE

Many of today's advanced astro-photographers are adding images made at three narrowband wavelengths to their traditional red-, green-, blue-, and clear-filtered exposures to produce dramatic color images of nebulae. The resulting demand for a system that can accommodate at least seven large-format filters, led Finger Lakes Instrumentation to create the CenterLine CL1-10 Filter Wheel with an overlapping pair of motorized 5-position filter carousels. Its symmetric design helps keep imaging setups evenly balanced.





SkyProdigy Telescopes

U.S. price: from \$699

Celestron

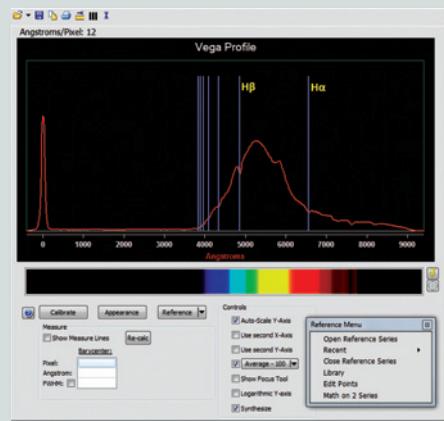
www.celestron.com

▲ SELF-ALIGNING SCOPE

Telescopes with Go To pointing take the hassle out of observing faint star clusters, nebulae, and galaxies, especially for beginning observers. But beginners often struggle with identifying the stars needed to initialize the Go To systems. That's not a problem for Celestron's award-winning SkyProdigy telescopes, which use onboard electronics to automatically locate and align on the proper reference stars. Just flip on the power and in a few minutes you'll be exploring the heavens with push-button ease. Current SkyProdigy models include a 70-mm refractor, 90-mm Maksutov, and 130-mm Newtonian reflector (pictured).

SPECTRUM ANALYSIS

Digital cameras and low-cost diffraction gratings are opening the fascinating world of astronomical spectroscopy to a growing corps of amateur astronomers (*S&T*: August 2011, page 68). *RSpec* software makes it easy to analyze spectra recorded with a variety of cameras, including video images captured in real time. Amateurs are now using modest backyard telescopes and spectroscopy to "see" everything from the methane signature in the atmosphere of Uranus to the redshift of quasars billions of light-years away. *RSpec* makes it easy to join in on the fun.



Rspec software

U.S. price: \$99

Field Tested Software

www.rspec-astro.com

Titan Power Tower

U.S. price: \$980

Kendrick Astro Instruments

www.kendrickastro.com

POWER TO GO ▶

Telescopes, laptop computers, CCD cameras, and dew-heaters are just a sampling of the power-hungry devices that amateur astronomers are routinely carting to remote locations for their observing sessions. To meet the demand, Kendrick Astro Instruments has developed the Titan Power Tower. Based on a 12-volt, 55-amp-hour rechargeable battery, and housed in a heavy-duty travel case, the Titan Power Tower has multiple outlets for 12-volt and USB-powered equipment, as well as a special 18-volt outlet for Meade and Losmandy telescopes that require this higher voltage.



ONAG (On-axis guider)

U.S. price: \$989

Innovations Foresight

www.innovationsforesight.com

◀ ON-AXIS GUIDING

This product intrigued us the moment we saw it. With its "hot mirror" reflecting all of a telescope's visible light to an imaging camera (or spectrograph), while letting near-infrared light pass straight through to the guiding camera, the ONAG lets you guide on objects in the same field that you are imaging, including the target of interest. A precision X-Y stage for the guiding camera lets you move around the field to select a suitable guide star. Watch for our review of the ONAG later this year.



S&T DENNIS DI CICCO

▼ PANNING CAMERA MOUNT

While it looks and acts like a conventional tracking mount when polar aligned, the StarLapse from Losmandy has a novel drive system that can turn at non-astronomical rates from $7\frac{1}{2}^\circ$ to 240° per hour. This gives time-lapse photographers (both terrestrial and celestial) the opportunity to make dramatic panning movies. Losmandy offers numerous accessories to mount single and multiple cameras to the StarLapse.



StarLapse

U.S. price: \$649

Losmandy

www.losmandy.com



WIDE-FIELD SHOOTING

Readers are constantly asking us how they can attach camera lenses to their astronomical CCD cameras so they can do wide-field imaging. Orion Telescopes & Binoculars offers a simple solution for anyone with a CCD camera that has a T-thread mount. Called the Orion Parsec and Universal CCD Camera to Nikon Lens Adapter, we think the name alone pretty much describes the product. Depending on what type of camera and which Nikon lenses you have, you may need additional T-thread spacers which are widely available. Orion also has an adapter made specifically for its StarShoot Pro camera, which has a built-in spacer.

Orion Nikon Lens Adapter

U.S. price: from \$109.99

Orion Telescopes & Binoculars

www.oriontelescopes.com



SCT Corrector

U.S. price: \$349

Starizona

www.starizona.com

SCHMIDT-CASSEGRAIN CORRECTOR ▲

For more than a quarter century, f/10 Schmidt-Cassegrain telescopes by Celestron and Meade reigned as astrophotography's workhorse instruments until they were recently superseded by coma-free models from both companies. But don't give up on those older scopes just yet. Starizona's new SCT corrector will turn them into f/7.5 systems with tight, coma-free star images to the corners of digital cameras with APS-size detectors. In addition to the SCT corrector, you'll need an adapter (\$50 to \$60) made for your camera model.

▼ BARGAIN-PRICED REFRACTOR

This 4-inch f/11 refractor from Astro Telescopes offers first-class mechanical construction and outstanding optical performance for a price that we'd expect to see on a department-store "junk scope." You'll need to supply your own mount, finder, and star diagonal, but the scope comes with tube rings and a Vixen-style dovetail mounting bar. For more information, check out our review of the AT102F11 in last month's issue, page 52.

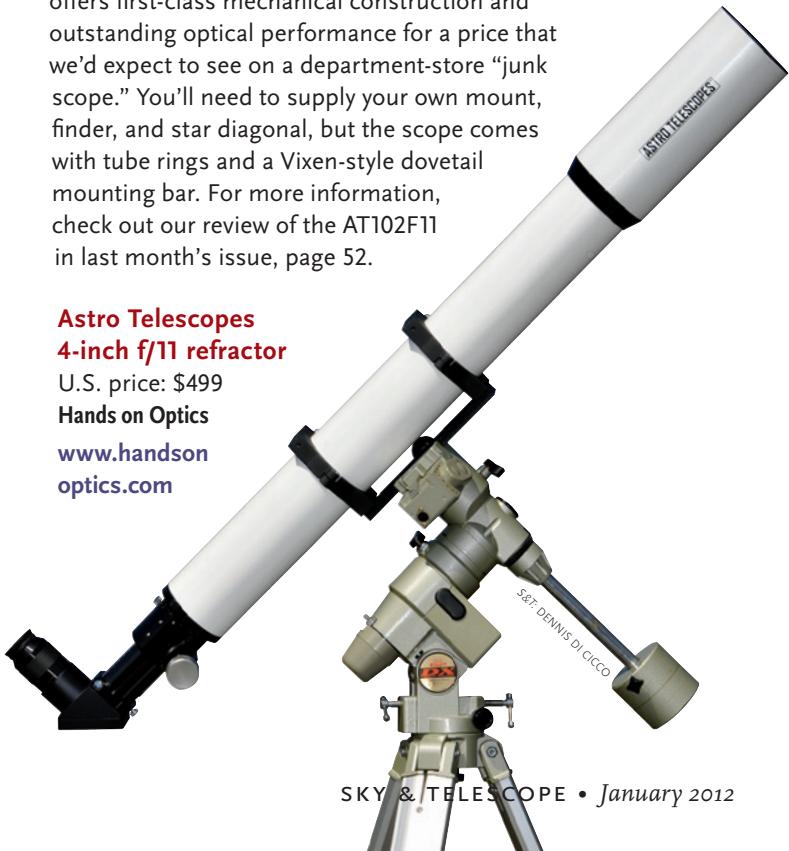
Astro Telescopes

4-inch f/11 refractor

U.S. price: \$499

Hands on Optics

www.handsoneoptics.com



▼ EDGE HD COOLER

Here's a fast way to bring your Celestron 8-, 11-, or 14-inch Edge HD telescope to ambient air temperature in preparation for a night of observing and astrophotography. Simply insert Starizona's Cool Edge module between the scope's removable secondary mirror and the mirror's mounting base, and fan-forced filtered air will quickly bring the scope's optics to ambient air temperature. When the optics are acclimated, you remove the Cool Edge, replace the secondary mirror, and you're ready to go.



Cool Edge

U.S. price: \$149

Starizona

www.starizona.com



Orion StarShoot G3

CCD camera

U.S. price: \$499.99

Orion Telescopes & Binoculars

www.oriontelescopes.com

▲ BARGAIN-PRICED CCD CAMERA

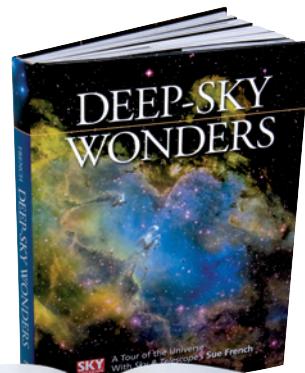
About a decade ago you might have paid \$3,000 or more to get roughly the same imaging performance available from the new Orion StarShoot G3 Deep Space Color Imaging Camera (a monochrome version will follow shortly). Regulated thermoelectric cooling, 16-bit images, and a $\frac{1}{2}$ -inch-format CCD detector are just a few of the noteworthy features available in this compact camera that can also double as an autoguider. Imaging and autoguiding functions are powered by the camera's USB 2.0 computer connection; only the thermoelectric cooling requires a separate 12-volt source.

Deep-Sky Wonders

U.S. price: \$39.95

Available from Sky Publishing

www.ShopatSky.com



S&T: DENNIS DI CICCO

▲ DEEP-SKY COMPILATION

No need for a vote recount on this Hot Product candidate; the decision was unanimous. Published by Firefly Books, *Deep-Sky Wonders* is a compilation of Sue French's extremely popular monthly columns in this magazine. Chronologically organized by months, French's engaging text is lavishly illustrated with color photographs, charts, and tables. The hardbound book is equally at home on a coffee table as it is under a dark sky next to your telescope.

VERSATILE MOUNT

Meade's LX80 mount is billed as three mounts in one. For quick setup with motorized tracking and Go To pointing, it can be used in altazimuth mode and configured to carry one or two telescopes with a combined weight of up to 75 pounds (34 kg). If your interests are long-exposure imaging, you can tip the LX80's head and polar align it as a traditional German equatorial mount. The LX80 comes with a stainless-steel tripod and the AudioStar hand controller that features audio descriptions of hundreds of celestial objects.



Meade LX80 mount

U.S. price: from \$799

Meade Instruments

www.meade.com

ALL-SKY VIEWING ▶

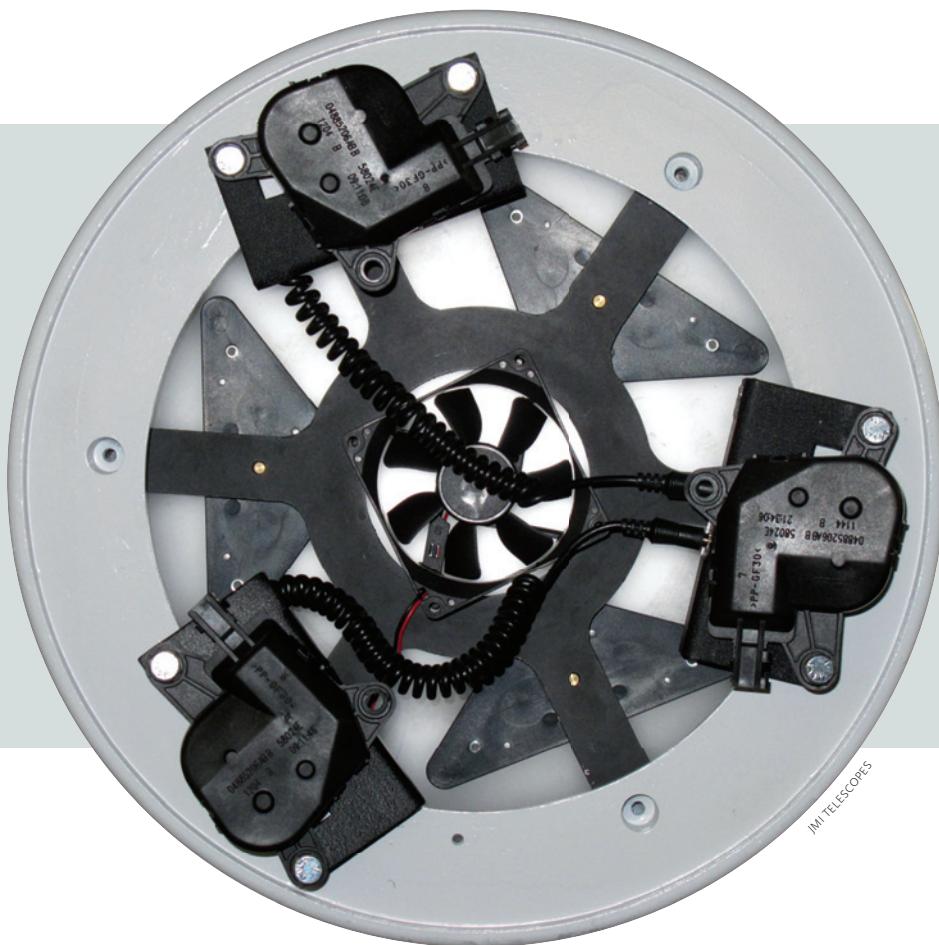
Ever wonder what's happening overhead when you're not watching the sky? Fret no more. With the Orion StarShoot AllSky CCD camera you can monitor a 180° fisheye view of the sky day and night on your TV or computer. The weatherproof housing is designed for permanent outdoor installation. A video-capture device and computer software (both included) allow you to automatically detect meteors and make time-lapse movies, as well as broadcast the camera's output on the Internet.

Orion AllSky Camera

U.S. price: \$899.95

Orion Telescopes & Binoculars

www.oriontelescopes.com



Vixen Polarie

U.S. estimated street price: \$399

Vixen Optics

www.vixenoptics.com

POCKET-SIZE TRACKER ▶

Looking a bit like a hefty point-and-shoot camera, the Vixen Polarie is a completely self-contained, battery-powered tracking mount. Just attach it to your camera tripod, eyeball polar alignment (or use the optional polar-alignment scope for more precise aiming), and you're ready to start shooting sky photos. One special feature is the half-sidereal tracking rate, which is popular with sky-scape photographers who capture wide-field images of the heavens above earth visas without excessive blurring. Watch for our review in the coming months.

ELECTRIC COLLIMATION

You won't have to run back and forth between the eyepiece and mirror cell of your Meade 10-, 12-, or 16-inch LightBridge Dobsonian reflector to achieve perfect collimation if you have the new ColliMotor system from JMI Telescopes. This easy-to-install retrofit kit lets you make precise adjustments to the primary mirror using a push-button hand box.

ColliMotor

U.S. price: \$239

JMI Telescopes

www.jimsmobile.com



MEGAPIXELS FROM CELESTRON ▶

Nightscape is the most advanced CCD camera to date from Celestron. The 10.7-megapixel, one-shot color camera has regulated thermoelectric cooling and a mechanical shutter that makes it easy to take dark calibration frames without having to cover the telescope's aperture. It comes with easy-to-use AstroFX software for making exposures and processing astronomical images. The software is specially designed with novice imagers in mind. Watch for our review of the Nightscape camera in the coming months, but we can already tell you that the camera and its images are impressive.

Nightscape CCD camera

U.S. price: \$1,499

Celestron

www.celestron.com



Modified astrographs

Price: from 2,099 Euros (about \$2,900)

Teleskop-Service

www.teleskop-express.de

▲ FAST ASTROGRAPHS

Germany's Teleskop-Service has made several user-requested modifications to the Boren-Simon 8-inch f/3.6 and f/2.8 PowerNewt Astrographs (S&T: December 2010, page 59). Models are now available with carbon-fiber tubes, low-profile Baader Steeltrack focusers, and secondary mirrors with enhanced coatings. The company can also customize the position of the astrograph's primary mirror to meet the back-focus needs of special cameras and filter wheels.

MORE THAN EXPECTED

Given the company's reputation for excellence, no one was surprised that Tele Vue's new Delos eyepieces (6- and 10-mm models are currently available with more planned) deliver pinpoint stars across their 72° apparent fields of view. And while the 20 mm of eye relief make them attractive for those who observe wearing eyeglasses, it was the "distinctly pleasurable" observing experience that most impressed our reviewer (see last June's issue, page 58). When it comes to eyepiece design, the Delos seems to have hit all the sweet spots.



Delos eyepieces

U.S. street price: \$325

Tele Vue Optics

www.televue.com