

# Hot New Products

BY THE EDITORS OF  
SKY & TELESCOPE

*Our 12th annual roundup of Hot Products highlights the most intriguing new astronomy gear in the worldwide market.*

for **2010**

**WHAT A YEAR!** After more than a decade scouring the astronomical marketplace for our annual Hot Products round-ups, we have a pretty good idea of what a typical year serves up, and 2010 is anything but typical. Our initial search revealed dozens and dozens of new products. The winnowing process, honed by years of experience, still produced a “short list” with more than twice the usual number of candidates, making our final selection especially difficult. But 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. And that last qualification played a major role this year. Consider, for example, a 120-mm apo refractor that delivers visual performance on par with premium-priced instruments but costs only \$1,495 (page 39), or a 10-inch Ritchey-Chrétien astrograph costing about one-fourth what similar instruments did just a couple of years ago (page 42). Whether or not you agree with our picks, we hope you’ll enjoy reading about the products that intrigued us the most.

## JUST FLIP THE SWITCH

Meade’s LightSwitch technology adds a new level of automation to the set up and use of Go To telescopes. Available with the company’s 6-inch Schmidt-Cassegrain and Advanced Coma-Free telescopes, LightSwitch uses GPS satellites, internal level and magnetic-north sensors, and a built-in medium-field CCD camera (for identifying alignment stars) to automatically initialize the Go To computer. All you do is set the scope down, plug it in, and flip one switch. After a few minutes you’ll be ready to view thousands of celestial objects at the push of a button. And that’s just the beginning — the scope’s integrated multimedia material is as educational as it is entertaining. Watch for our review in the coming months.



### Meade 6-inch LightSwitch telescopes

US price: from \$1,299

Meade

[www.meade.com](http://www.meade.com)

S&T DENNIS DI CICCIO



### THERE'S AN APP FOR THAT

Want to know what that bright star is in the morning twilight? Now you can find out with an app for your Apple iPhone or iPod Touch. *StarMap* is a full-featured planetarium program with top-notch graphics, which can show you where the Sun, Moon, planets, up to 2½ million stars, and thousands of deep-sky objects are located in your sky. Input your location and time manually, or let the GPS feature of your iPhone do it automatically. *StarMap* is available in English, Spanish, French, German, Italian, Japanese, Dutch, and Danish.

#### **StarMap**

US price: from \$11.99  
Available from the iPhone App Store  
<http://star-map.fr>



#### **AstroTrac Travel System** ▶

US price: about \$2,500  
AstroTrac  
[www.astrotrac.com](http://www.astrotrac.com)



#### **Edge HD Telescopes**

US price: from \$1,299  
Celestron  
[www.celestron.com](http://www.celestron.com)

### STELLAR PERFORMANCE

Billed as aplanatic Schmidt telescopes, the EdgeHD series represents the first major redesign of the Schmidt-Cassegrain optical system that Celestron introduced in the 1960s. The addition of a two-element field flattener and coma corrector in the scope's main baffle tube produces pinpoint star images across the whole field of today's large-format CCD cameras. And a new mirror-support system reduces the image shift that was often the bane of earlier Schmidt-Cassegrain telescopes. Watch for our review in the coming months.

### IT'S IN THE BAG

It doesn't get much more portable than this — the entire equatorial tracking setup pictured here (sans telescope) fits in a shoulder bag just 6 inches (150 mm) in diameter and 29½ inches long. Weighing about 26 pounds (12 kg), the Travel System from AstroTrac has a payload capacity of 33 pounds, making it ideal for cameras and small telescopes. Its tracking accuracy is sufficient for unguided exposures several minutes long, depending on your camera's focal length. The heart of the Travel System is the TT320X tracking mount, an updated version of the model we reviewed in the October 2008 issue, page 38.





S&T: DENNIS DI CICCO

### FirstScope

US price: \$49.95

Celestron

[www.celestron.com](http://www.celestron.com)

### STARTING OUT RIGHT

Don't let the toy-store price fool you; the exceptionally well-designed Celestron FirstScope received praise from the *S&T* staff, as well as high marks in our Quick Look review in the October 2009 issue, page 40. The intuitively easy-to-use 3-inch reflector features a solid Dobsonian-style mount and quality construction throughout. The rack-and-pinion focuser accepts standard 1¼-inch eyepieces and is supplied with 20- and 4-mm eyepieces that yield 15x and 75x, respectively. It's one of the best values we've ever seen for a "beginner's" telescope.



KENDRICK ASTRO INSTRUMENTS

### Red Dot Finder Heater

US price: \$25

Kendrick Astro Instruments

[www.kendrickastro.com](http://www.kendrickastro.com)

### DEW BE GONE

Red-dot finders are universally praised for their simplicity and intuitive operation. But their viewing windows are often the first things to dew up under a clear sky. Now Kendrick Astro Instruments, long known for its dew-fighting innovations, has a custom-made window heater for one of the most popular styles of red-dot finder. The 12-volt DC heater draws just 0.2 amp. It's an elegant solution to a common problem.

### Nautilus Motorized Filter Wheels

US price: from \$429.95

Orion Telescopes & Binoculars

[www.oriontelescopes.com](http://www.oriontelescopes.com)

### AFFORDABLE FILTER WHEEL

Priced more like manually operated models, the Orion Nautilus Motorized Filter Wheel is an excellent value for those looking to add computer automation to their imaging systems. Versions are available that hold four 2-inch or seven 1¼-inch filters. Both require less than 1 inch of back focus, are powered by USB computer connections, and are compatible with 64-bit Vista, Windows 7, and ASCOM. T-threads on both sides of the body and an included 2-inch nosepiece provide a variety of mounting options.



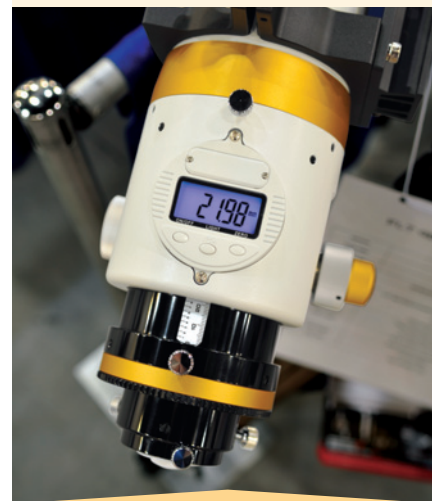
ORION TELESCOPES & BINOCULARS

### Digital Display Gauge

Available on select William Optics telescopes

William Optics

[www.williamoptics.com](http://www.williamoptics.com)



S&T: DENNIS DI CICCO

### PRECISION FOCUSING

The Crayford-style focuser on select William Optics telescopes now includes a built-in digital readout accurate to one-hundredth of a millimeter. The fully electronic system reads the focuser's position from a special encoder strip located beneath the engraved scale on the drawtube. The gauge makes it a snap to zero in on the precise focus for digital cameras.

## DELIGHTFUL SKYWATCHER

The price may not look like it belongs to a 120-mm (4¾-inch) apo refractor, but the views through the eyepiece certainly do. Reviewed in the October 2009 issue, page 38, the Sky-Watcher SW 120mmED Refractor offers color-free, crisp, contrasty views that are on par with apo refractors costing thousands of dollars more. Making the deal even sweeter, the f/7.5 refractor (shown on an optional mount) comes with a 2-inch diagonal, 20- and 5-mm eyepieces, a 9 × 50 finder, tube rings, a Vixen-style dovetail mounting bar, and a carrying case.



### SW 120ED Refractor

US price: \$1,495

Sky-Watcher U.S.A.

[www.skywatcherusa.com](http://www.skywatcherusa.com)



### 100° Eyepieces

US price: from \$399

[www.televue.com](http://www.televue.com)

[www.explorescientific.com](http://www.explorescientific.com)

[www.tmboptical.com](http://www.tmboptical.com)

### EXPANSIVE VIEW

For the third year in a row, eyepieces with an incredible 100° apparent field of view have been selected as Hot Products. It's understandable, since observers worldwide have raved about the experience of looking into an eyepiece where you have to roll your eye around to take in the whole scene. In addition to two new Ethos eyepieces (10- and 21-mm) from Tele Vue, the company that pioneered the 100° astronomical eyepiece, there are two models from TMB Optical (9- and 16-mm) and three from industry newcomer Explore Scientific (9-, 14-, and 20-mm). Check out the respective company websites for complete details and prices.

### Hyperion Astrograph

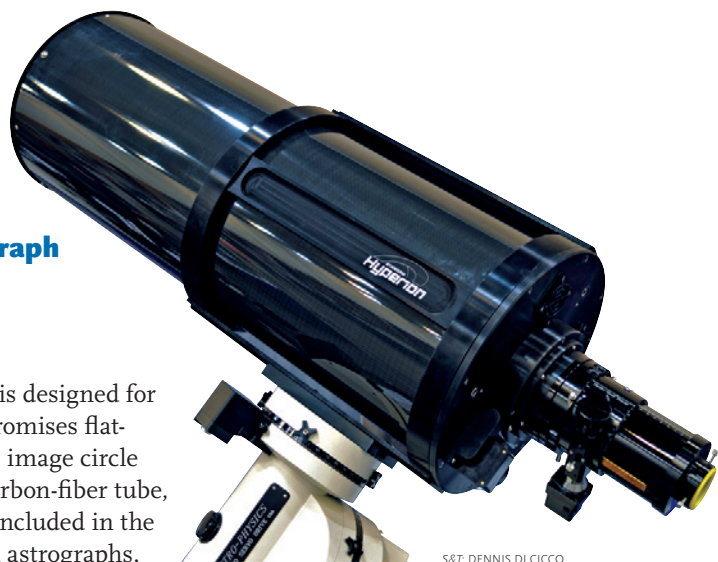
US price: \$10,000

Starizona

[www.starizona.com](http://www.starizona.com)

## DEEP-SKY HEAVYWEIGHT

Several years in development, the Hyperion 12½-inch f/8 astrograph is designed for large-format astrophotography. The Harmer-Wynne optical system promises flat-field, diffraction-limited performance across a 70-mm-diameter (1.6°) image circle with less than 10% vignetting. A host of advanced features such as carbon-fiber tube, temperature-compensated focusing, and built-in instrument rotator included in the base price make this a serious entry in the rarified world of premium astrographs.







S&T: SEAN WALKER

### A FLATTER FIELD

With only a few noteworthy (and expensive) exceptions, refractors need optional field flatteners in order to deliver acceptable star images across the field of today's DSLR cameras. Custom-designed flatteners usually cost hundreds of dollars, but the Astro-Tech 2" Field Flattener is only \$150. Furthermore, it's designed for any refractor with a focal ratio between f/6 and f/8. And there are reports that it helps flatten the field of Astro-Tech's Ritchey-Chrétien astrographs (see page 42). The flattener was reviewed in the September 2009 issue, page 38.

#### 2-inch Field Flattener

US price: \$150

Astronomy Technologies

[www.astronomytechnologies.com](http://www.astronomytechnologies.com)



#### StarBlast 6i IntelliScope

US price: \$399.95

Orion Telescopes & Binoculars

[www.oriontelescopes.com](http://www.oriontelescopes.com)

ORION TELESCOPES & BINOCULARS

### SMARTER STARBLAST

The 6-inch f/5 Newtonian reflector that received an excellent review in our September 2008 issue, just got a brain. Orion's StarBlast 6i IntelliScope now includes the company's time-tested computerized object locator, which makes it a breeze to find more than 14,000 celestial objects stored in its built-in database. The feature-packed scope comes on a fully assembled Dobsonian-style mount that we found to be exceptionally beginner friendly without compromising the needs of experienced observers.



#### TMB92 Light

US price: \$1,495

TMB Optical

[www.tmboptical.com](http://www.tmboptical.com)

### LIGHT APO

The TMB-92 Signature Series Refractor got such a rave review in our March 2009 issue, page 36, that we could not help but take note when the company introduced a new "light" version costing hundreds of dollar less. Featuring the same 92-mm f/5.5 triplet objective as the original, the light version has a smaller-diameter tube and the premium Feather Touch focuser has been replaced with a conventional dual-speed 2-inch focuser. Same great views; new lower price.



FARPOINT ASTRONOMICAL RESEARCH

### NO MORE PINCHED FINGERS

#### Eukleides Binocular Mount

US price: \$485

Farpoint Astronomical Research

[www.farpointastro.com](http://www.farpointastro.com)

By "literally turning it inside out," the folks at Farpoint Astronomical Research have made the traditional parallelogram binocular mount stiffer, more resistant to vibration, and safer (no accessible moving parts to pinch fingers). An internal sliding counterweight adds to the mount's elegant appearance. There are a variety of options available for attaching binoculars to the unit.



**COMPACT CCD CAMERA**

No CCD sensor in recent memory has generated as much excitement as the 8.3-megapixel Kodak KAF-8300 with tiny 5.4-micron pixels. All the major manufacturers of astronomical CCD cameras offer models with this detector, but those from Quantum Scientific Imaging caught our eye, because the built-in filter wheel is so close to the sensor that it works with standard 1¼-inch filters. This can save hundreds of dollars compared to cameras that use external filter wheels and, by necessity, larger filters.

**QSI 583 CCD Camera**

US price: from \$3,595

Quantum Scientific Imaging  
[www.qsimaging.com](http://www.qsimaging.com)

**Pressure-tuned Solar Filter**

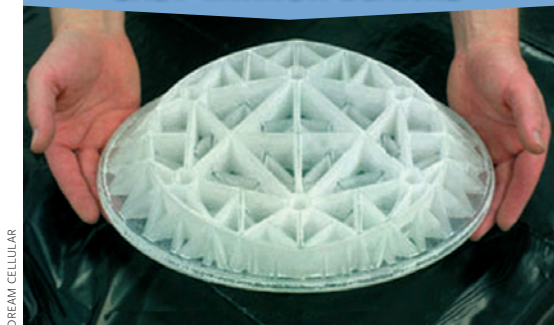
Lunt Solar Systems  
[www.luntsolarsystems.com](http://www.luntsolarsystems.com)



**TUNING IN THE SUN**

Even though the Sun has been notably absent of spots lately, it's still a fascinating target for telescopes equipped for viewing in hydrogen-alpha (H-alpha, for short) light. Long a leader in the field of H-alpha filters, Lunt Solar Systems has developed a new pressure-tuning method for rapidly shifting the passband of its etalon-based filters by more than 0.75 angstrom. A quick turn of the pressure regulator allows you to see the changing appearance of solar features that are Doppler shifted by their motion toward and away from us. The system is seen here installed on the company's LS60THa/B1200CPT solar telescope priced at \$1,493.

**CAST MIRROR BLANKS**



Lightweight mirrors have been the Holy Grail of telescope makes (both amateur and professional) for decades. Reducing a mirror's mass reduces the time it takes to adjust to temperature changes. It also reduces the mass and complexity of the optical support system and the telescope in general. A new start-up company, Dream Cellular, is using sophisticated computer technology to design and cast some of the most advanced lightweight mirror blanks ever made for telescopes.

**Cellular Mirrors**

Dream Cellular  
[www.dreamcellularllc.com](http://www.dreamcellularllc.com)

Having as little as 25% of the mass of a conventional solid mirror, the blanks still exceed the stiffness of a monolithic disk.

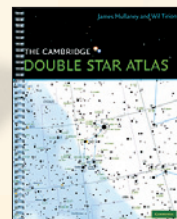
**TRIO OF TITLES**

It's no surprise that we like books, but three titles captured our fancy this year. Part coffee-table book and part observer's guide, the lavishly illustrated *Atlas of the Messier Objects* (\$54.95, Cambridge University Press) breathes new life into the sky's most popular deep-sky objects and the people who discovered them. *The Cambridge Double Star Atlas* (\$35, Cambridge University Press) is a pure observer's guide, with data and charts for hundreds of multiple stars covering the entire sky. The new edition of *Star Testing Astronomical Telescopes* (\$34.95, Willmann-Bell) is a major update of a work that should be on the shelf of every observer who wants to get the most from his or her telescope. We highly recommend all three titles.

**Three Books**

Cambridge University Press  
[www.cambridge.org](http://www.cambridge.org)

Willmann-Bell  
[www.willbell.com](http://www.willbell.com)





## LEAVE THE COMPUTER HOME

Many deep-sky astrophotographers shooting with DSLR cameras don't want to lug a computer outside to run an autoguider. Fortunately, there's now the StarShoot Solitaire AutoGuider from Orion Telescopes & Binoculars. The stand-alone unit has a 3.8-ounce guider head with a CMOS sensor that fits in conventional 1¼-inch focusers and a palm-size control box that runs on 12-volt DC power. The Solitaire is compatible with any mount that complies with the de facto SBIG ST-4 autoguiding standard.



ORION TELESCOPES & BINOCULARS

### StarShoot Solitaire AutoGuider

US price: \$599.95  
Orion Telescopes & Binoculars  
[www.oriontelescopes.com](http://www.oriontelescopes.com)

## 8- and 10-inch Ritchey-Chrétien Astrographs

US price: \$1,395 (8-inch), \$2,795 (10-inch)  
Astronomy Technologies  
[www.astronomytechnologies.com](http://www.astronomytechnologies.com)



SBIG DENNIS DI CICCIO

## SWEET ASTROGRAPHS

Ritchey-Chrétien reflectors are highly regarded among today's elite astrophotographers, and premium instruments often carry price tags starting at about \$1,000 per inch of aperture. So it's the best kind of "sticker shock" to see the prices for Astro-Tech's 8- and 10-inch f/8 Ritchey-Chrétiens, which pack features too numerous to list here. Our review of the 8-inch scope appears in last month's issue, page 38, and our initial hands-on look at the 10-inch suggests that it will be equally exciting for deep-sky astrophotographers.

## ONE-BUTTON AUTOGUIDING

Twenty years ago the folks at Santa Barbara Instrument Group forever changed the world of deep-sky astrophotography with their introduction of its now-legendary ST-4 autoguider. The latest model in the company's evolution of stand-alone autoguiders is the SG-4. You only need a separate computer for a one-time calibration with your telescope mount. After that, the SG-4 runs independently, making it ideal for DSLR photographers who want to keep things simple in the field. Indeed, the SG-4 is billed as a "smart" autoguider that features one-button operation.

### SG-4 Autoguider

US price: \$995  
Santa Barbara Instrument Group (SBIG)  
[www.sbig.com](http://www.sbig.com)



SBIG (2)

## CASSEGRAIN COLLIMATION

For many years Newtonian telescope owners have enjoyed the benefits of laser collimators to align the optics of their scopes during daylight. Now HoTech Corp. has expanded its line of laser collimation tools to include a unique system for Cassegrain telescopes. The Advanced CT Laser Collimator uses a target with three built-in lasers and a special reflector that fits in the scope's eyepiece holder, providing a highly accurate double-pass optical arrangement.

### Advanced CT Laser Collimator

US price: about \$500  
HoTech Corp.  
[www.hotechusa.com](http://www.hotechusa.com)



HOTECH



## A PAIR OF PORTABLE GEMS

Rated for payloads of 40 and 90 pounds, respectively, Celestron's CGEM (*left*) and CGE Pro German equatorial mounts offer unquestionable value when it comes to Go To performance for astrophotographers and observers. Designed for portable operation using 12-volt DC power, both mounts have many advanced features, including precise polar-alignment routines that don't require clear views of the celestial pole. Our review of the heavy-weight CGE Pro appears in the November 2009 issue, page 50.

### German Equatorial Mounts

US price: \$1,399 (CGEM) and \$4,999 (CGE Pro)

Celestron

[www.celestron.com](http://www.celestron.com)



## LARGE-FORMAT AND SELF GUIDING

After several years of development, SBIG has introduced its STX line of CCD cameras. Designed to handle large-format sensors, including Kodak's 16-megapixel KAF-16803 chip, the STX series is unique in featuring the company's patented self-guiding technology. A separate CCD, mounted next to the imaging sensor, monitors guide stars at the edge of the field. New to the STX line is its ability to let users independently tweak the focus of the guiding chip, which is important given its significant off-axis position due to the large imaging chip.



### Self-guiding STX CCD Camera

US price: \$11,875

Santa Barbara Instrument Group (SBIG)

[www.sbig.com](http://www.sbig.com)

### Versa 108 ED Refractor

US price: \$1,699

iOptron

[www.ioptron.com](http://www.ioptron.com)



## APO WITH A FIELD FLATTENER

We were impressed when the cost of some 4-inch apo refractors dropped to the \$2,000 range, so there's little surprise we like the Versa 108-mm (4¼-inch) f/6.1 apo from iOptron. The ED-glass doublet objective is fitted to a well-crafted, 114-mm-diameter tube assembly with a rotating, dual-speed 2-inch focuser. And photographers shooting day or night will like the included 2-inch field flattener that turns the scope into an excellent "telephoto" lens of 660 mm focal length.