

by Terence Dickinson



**TWO FOR THE SHOW**  
Celestron's 6-inch SE (centre) and CPC 8-inch GPS Schmidt-Cassegrain telescopes. The SE Series also includes 5-inch and 4-inch models (the 4-inch is a Maksutov-Cassegrain). The CPC Series is rounded out by 9.25-inch and 11-inch models. In both series, a 40,000-object database is accessed via an LCD scroll window on the control paddle.

# Celestron's computerized backyard telescopes

*A new generation of computerized Schmidt-Cassegrain telescopes boasts the easiest-to-use GoTo systems yet. We tested the Celestron CPC 8-inch GPS and NexStar 6-inch SE. Here's our report.*

DURING THE PAST DECADE, COMPUTERIZED TELESCOPES HAVE BECOME so commonplace that I now regularly encounter them stacked on the shelves in several of my local big-box discount stores, all priced under \$300. If nothing else, this is a sign that these scopes can be found almost *anywhere*.

Yet over the years, my tests of these low-end computerized telescopes have been consistently disappointing. I have found them to be flimsy, fitted with poor optics and accompanied by woefully inadequate instructions. Bottom line: They were all frustratingly difficult to use, and some didn't function at all. I consider them expensive toys, not recommended for either adults or children.

So much for the under-\$300 end.

But over the same 10-year period, backyard computerized telescopes in the \$600-to-\$3,000 range have evolved to include some superbly functional instru-

ments, attractive to both beginners and more experienced observers. Two recent arrivals are seen here: the Celestron CPC 8-inch GPS Schmidt-Cassegrain and the NexStar 6-inch SE Schmidt-Cassegrain. In a matter of minutes, each of these telescopes can be set up and aligned so that it can be commanded to point precisely at a planet or any one of thousands of galaxies, nebulas, clusters and multiple stars in the instrument's database.

The most astonishing part is that the person doing the setup does not need to know the name or location of a single celestial object. In other words, someone

who has never identified the Big Dipper can now walk into a telescope store and walk out with a telescope that can be used the next clear evening to locate and observe the Whirlpool Galaxy.

Some would argue, as I have in the past, that an initiation period of a year or more spent learning the constellations and finding celestial objects *yourself* is essential to becoming a true backyard astronomer. The challenge of hunting down celestial quarry using the eye, finderscope and telescope is backyard astronomy in its purest form. The smudge of a remote galaxy means more when *you* find it, rather than some computer.

However, I did most of my constellation learning and deep-sky hunting from the convenience of the backyard at a time when most backyards were reasonably dark. Today, the average urban or suburban backyard is moderately or severely light-polluted. For many people, full-blown observational astronomy—actually standing under a night sky with a distinct Milky Way—is limited to the few nights when they can travel to a site where a dark sky is accessible. In these circumstances, a GoTo telescope with a shallow learning curve is the right technology for the times.

The Celestron CPC 8-inch GPS tele-

## CPC 8-inch GPS



**PORTABLE, COMPACT AND SOLID** Setting up the Celestron CPC 8-inch (above) outdoors is quick and easy. Just place the telescope base atop the tripod, and tighten three bolts. Once powered up, the internal GPS unit determines the time and location on Earth. After a simple alignment on any three bright stars, the telescope is ready to point to any of thousands of objects in its database. The CPC system requires no polar alignment, no identification of alignment stars, no levelling of the telescope tube and no pointing north. Instructions scroll on the control-paddle screen. The scope is powered by supplied AC adapter.

scope requires no special positioning—no polar-aligning, no pointing north, no levelling of the optical tube, no entering of the date, time or location—nothing except levelling the tripod using the bubble level on the tripod head. (I even tried it without levelling, and it worked!)

The key is the Global Positioning System (GPS). A GPS receiver in the mount tells the computer where the telescope is on Earth within a few metres and what time it is within a fraction of a second. You simply point the telescope at any three reasonably prominent celestial objects—planets, stars, even the Moon—then, as each object is centred in the eyepiece, press “align” on the control keypad. For best accuracy, the three objects should be in well-separated parts of the sky.

At this point, the keypad readout confirms that the alignment is complete. In effect, the computer has figured out which three objects you aligned on. You can now select any of thousands of celestial objects in the computer’s database, and the telescope will point with deadly accuracy or will tell you to try again if the desired target is below the horizon. There are even sky tours if you aren’t sure what to request. Information about each object on the tour scrolls across the keypad readout.

The SE Series, which includes 4- and 5-inch models, does not have the integrated GPS unit. Instead, at the appropriate prompt, you enter the time and the observing site’s latitude and longitude using the keyboard controller. Or, if the coordinates are not known, you select the nearest city from a scrolling list in the database. After that, the three-star alignment is the same as the CPC’s setup routine.

Does it work? These scopes are a joy to use. The CPC 8-inch always zeroed in on the target objects, consistently placing the celestial quarry in the central sector of the low-power field of view. I soon found myself happily cruising from one object to another using a 100x eyepiece with a 0.6-degree field. Time after time, it was a pleasure to see each new object emerge right there in the field, with enough magnification to see it well. This powerful astronomical instrument is ready to offer a lifetime of observing pleasure.

I had similar results with the 6-inch SE using the supplied 25mm Plössl eyepiece giving 60x and a 0.9-degree field. This lightweight telescope is easy to carry outside completely assembled—a truly portable instrument that has the full capability of six inches of aperture yet an ultracompact 14-inch-long tube. Saturn looked great at 167x using a 9mm eyepiece.

Both telescopes had sharp, well-collimated optics right out of the box. The instructions for each scope are complete and not encumbered with annoying ambiguities, at least none that I noticed. Here are two well-behaved telescopes that get my full five-star recommendation. ■

### NexStar 6-inch SE

#### BATTERY POWER

A compartment atop the base of the 6-inch SE’s mount holds eight alkaline AA batteries that power all functions, making the mount completely wireless and very compact. Alternatively, an AC adapter for household current or a DC adapter for a car’s cigarette-lighter socket are available options.



#### 6-INCH OPTICS

Six-inch optics don’t come any more compact than this 14-inch-long tube. The central plate on the Schmidt-Cassegrain front corrector lens holds a convex mirror that reflects incoming light through a central hole in the main mirror. Three screws are for collimating the optics, if required.



### PRODUCT SPECIFICATIONS

#### Celestron NexStar 6-inch SE

6-inch f/10 Schmidt-Cassegrain  
40,000-object database  
SkyAlign (3-star align, plus other modes)  
25mm E-lux eyepiece (60x)  
Red-dot-type finderscope  
Weight: 30 pounds with tripod  
Price in Canada: about \$1,275

#### Celestron CPC 8-inch GPS XLT

8-inch f/10 Schmidt-Cassegrain  
Internal GPS; 40,000-object database  
SkyAlign (3-star align, plus other modes)  
40mm Plössl eyepiece (51x)  
9 x 50mm finderscope  
Weight: 61 pounds with tripod  
Price in Canada: about \$2,600

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