Terence Dickinson (both)

*Operated by commands punched into a cellphone-sized hand paddle, the NexStar 11 GPS is a serious telescope that is remarkably simple to use. After an initial alignment procedure (basically pointing at two bright stars), our tests revealed that this telescope very accurately swings to any one of the thousands of celestial targets the observer can select from its data bank. Focus shift, often associated with Schmidt-Cassegrains, was absent in our test unit.*

# CELESTRON'S NEXSTAR 11 GPS

*We test the first GPS-equipped telescope for backyard astronomers*

BY TERENCE DICKINSON

WHEN I BEGAN LOOKING for my first serious telescope in 1959, I used to gaze for hours at the 8-inch equatorial Newtonian that gleamed from the pages of the colour catalogue from Cave Optical of California. That was the high-tech telescope of its time. "What a beauty," I thought. I dreamt about how exciting it would be to be at the controls of such an instrument, even though it was far beyond the reach of my teenager's wallet.

Today, the choice among dream scopes is bewildering. There are dozens, and the overall quality and value in serious backyard telescopes are vastly superior to what they were four decades ago at the dawn of modern amateur astronomy.

One telescope that certainly qualifies as a dream scope is the new Celestron NexStar 11 GPS. With an impressive 11-inch aperture and truly unique features shared by no other telescope currently available, the NexStar 11 has generated a lot of interest. Most of the buzz centres on the GPS (Global Positioning System) receiver that this telescope uses for object location and tracking.

The GPS is a network of satellites developed by the U.S. government to provide highly accurate positional and time information for military and civilian users. Hand-held GPS units that can receive signals from the satellite fleet are widely available for a few hundred dollars. Having one pre-installed in a telescope means the telescope "knows" when and where it is at all times. The only additional input it needs is the observer's assistance to acquire the exact position of a couple of stars to create a highly accurate "model" of the night sky relative to the orientation of the telescope mount.

Here's how the NexStar 11 GPS works in the field. The tripod is set up at the selected observing site, and the legs are tightened at a suitable height. The telescope/mount assembly is then placed atop the tripod. A pin on the flat top of the tripod fits into a receptacle hole in the mount base to ensure proper locking by three bolts in the base. The telescope tube is then swung to point straight down in its fork tines. Setup is now complete. No levelling, no finding north, no inputting of date, time or other parameters.

When darkness falls, turn the power switch on, press ENTER, then press ALIGN. Motors quietly whirr, the tube moves, and the scrolling readout on the hand paddle says the telescope is "GPS searching." After a minute or two, it reads "GPS linked," slews to the first alignment star and asks you to position the star in the finder crosshairs, then in the centre of the eyepiece field. This is easy to do with the right-left, up-down, slow-motion buttons on the control paddle. Once the star is positioned in the eyepiece field, the telescope proceeds to the second alignment star and asks for the same centring procedure. From then on, you simply select the next object for viewing from a categorized list of 40,000 objects, and the telescope slews right to it—and I mean *exactly* to it.

Even at 220x, every object I requested was well within the field. Most were dead centre. (A quick "recalibrate" procedure every hour or two ensures this accuracy all night.) Objects can be selected by popular name (Double Double, Hercules Cluster, Dumbbell Nebula) or by catalogue number.

If all this sounds as if it will work for a complete novice who can't recognize a single star, that's not quite true. The step where the scope initially points at the two alignment stars is only a rough guide. Celestron says this is due to the difference between

magnetic north and celestial north, a parameter that varies with location throughout the world. However, since the alignment star is named on the hand-paddle display and is always a bright star, anyone with moderate familiarity with the constellations will have no problem slewing to it using the hand controls.

As is often the case with Schmidt-Cassegrains after truck delivery from the dealer, the optics required a minor collimation tweak. Once collimated, the optics tested above average for this telescope category. The view I had of Saturn at 220x would impress anyone, even a veteran observer. The carbon-fibre tube permits quick cool-down, the go-to motors emit a subdued whirr, and the sleek all-black instrument exudes a stealthy ultra-high-tech appearance. This is a neat scope that I enjoyed using. ❍

## Product specifications

**Telescope type:** 11-inch (280mm) f/10 Schmidt-Cassegrain
**Tube-assembly length:** 24 inches
**Telescope mount/tube-assembly weight:** 65 pounds
**Tripod weight:** 25 pounds
**Supplied eyepiece:** 40mm Plössl with diagonal in 1.25-inch focuser
**Finderscope:** 9x50
**Power requirements:** 12 volts DC, either battery pack or AC converter (supplied)
**Most desirable upgrade:** dew protection, such as Kendrick dew-remover system for front corrector lens
**Optics rating:** ☆☆☆☆ 1/2 (out of 5)
**Overall rating:** ☆☆☆☆ (out of 5)
**Canadian dealer price:** $4,995