Astronomy tests Celestron’s NexStar Evolution

This setup is as close to “grab-and-go” astronomy as an 8-inch Schmidt-Cassegrain telescope can be by Craig and Tammy Temple

When we saw the first mention of Celestron’s NexStar Evolution 8 telescope, we knew it would be a great product. This review gave us the opportunity for a “first look,” and, wow, are we happy! While we have been into astronomy for some time, we also have logged many hours visual observing, and even more recently.

As of late, we have begun joining a local group in doing some outreach. Sharing nighttime views with the public affords us more opportunities to do visual astronomy — and to show off this telescope.

Assembly

The package that arrived on our doorstep included an 8-inch Schmidt-Cassegrain telescope, an alt-azimuth mount, a hand controller, a 1¼” star diagonal, a red-dot finder, an AC adapter with U.S., European, British, and Australian plugs, and two Plossl eyepieces (40mm and 13mm), all standard. The box additionally included a USB cable and a serial cable, which are not standard. Assembly of the system was straightforward and simple. As we followed the instructions in the included manual, we learned that a smart device (Apple iOS devices with iOS 7.0 and later or an Android device with Android 4.0) can control the mount. That intrigued us even more. With the battery fully charged and the free Celestron SkyPortal app downloaded and installed on our iPad, the only thing we had to wait for was clear skies.

Setup

As far as setup goes, simply unplug the mount from the A/C adapter, pick a spot suitable for viewing, and set it down — no need to worry about mount/tripod orientation. Level the mount using the built-in bubble level, orient the OTA parallel to the ground and pointing to an unobstructed view of the horizon, switch on the power, connect to your smart device (or use the hand controller), do a two- or three-star alignment (if few bright stars are available, you can use the Moon and/or a planet, and you’re ready to go. Easy-breezy, nice and easy!

For our setup, we used two bright stars and Saturn. As for telescope control, using the iPad was not only simple but also really fun. Celestron’s SkyPortal is a nice planetarium app that lets you simply touch a target on the screen and command the NexStar Evolution to “go to” that object. It also has arrows for slewing the telescope. The app lets you refine its accuracy by adding up to 10 additional alignment points. Simply tap a star on your screen, tap “Goto,” center the object in the eyepiece, and then tap “Align.” With these features, we found locating and tracking objects to be so accurate that we used the manual slewing — after the initial setup — only when we viewed the Moon’s many features.

First light was a real treat because of the simple setup and pleasing views of Saturn and the Moon, which confirmed the quality of the optics. And controlling the telescope was a snap with the iPad.

Being avid astrophotographers, we had to image something. We opted to start with Saturn and the Moon. Short of an issue with the Wi-Fi connection (for the iPad) dropping a couple times, first light was a success with both viewing and imaging. Feeling satisfied, we called it a night and found that breaking down the system was even easier than setting it up.

More great features

As we continued to observe with this wonderful telescope, we found numerous features that helped us understand why Celestron called it the “Evolution.” It really is a next step for amateur astronomy.

One feature for setting the tracking rate to either “Sidereal,” “Lunar,” “Solar,” or “Off.” You also can set the Anti-Backlash in both altitude and azimuth to eliminate any play between gears.

When you purchase one of Celestron’s NexStar Evolution telescopes, you get a complete system, including the optical tube, computerized go-to drive, and stainless-steel tripod.

Another nice feature is the “Altitude Slow Limits.” This prevents the telescope from striking the mounting when you attach oversized accessories or when the optical train is long. It also prevents the telescope from slewing below obstructed horizons. Also helpful is “Slew Limits at Slow Speeds.” This allows you to change the direction of the slew buttons when you use them at the three lowest slewing speeds.

How many times have observers wished that a control button’s position corresponded to the direction the object would move in the field of view? This setting can change it to match.

If your mount is permanent or semi-permanent, you’ll like “Hibernate Enabled.” This convenient feature lets you save the telescope alignment when powering off or disconnecting the OTA from the mount.

Celestron’s NexStar Evolution telescopes come in 6-inch, 8-inch, and 9.25-inch versions. Astronomy tested the 8-inch model for this review. YIKES DESIGNS

Craig and Tammy Temple are a husband-wife team who have enjoyed the great hobby of astrophotography since 2007.

Three more minor but useful features are “Battery Status” (displays voltage, charging/discharging, and High, Medium, or Low status), “Tray Lighting” (adjusts the LED brightness of the accessory tray light), and the USB charger (allows for charging a smart device).

While the Evolution has even more features, they are not too different from those on most “go-to” telescopes, so we will move along. One thing we really appreciate is that using the hand controller and a smart device interchangeably during a session does not work without realigning. What this means is if you set up and align using a smart device, then decide you would like to use the hand controller, you will have to repeat the setup and alignment with the hand controller or vice-versa.

Because we are accustomed to a much more involved setup, the normal rig (i.e., lugging a heavy marine battery to power the mount, spending time performing polar alignment, having to connect to a laptop or PC for go-to capability, and being limited to rather slow slew speeds), saying that getting to use the NexStar Evolution 8 telescope package was a real treat is an understatement. It was fantastic!

This package is definitely a winner for the observer, and it even does a great job at imaging. You don’t often hear of an 8-inch SCT package being called a “grab-and-go” setup, but we wouldn’t hesitate to put it in that category. With its portability, simple setup, and ease of use, we would highly recommend it to any visual astronomer, especially those doing outreach, and also would suggest it to someone interested in lunar and planetary imaging.

PRODUCT INFORMATION

Celestron NexStar Evolution 8
Optical design: Schmidt-Cassegrain
Focal length: 2,032 millimeters
Focal ratio: f/10
Secondary mirror obstruction: 9.77%
Database: More than 120,000 objects
Optical tube length: 17 inches (43 centimeters)
Total weight: 48.6 pounds (21.6 kilograms)
Price: $1,599.95
Contact: Celestron
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Torrance, CA 90503
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As a result of being a brand new product, we supplemented our experience with a free Wi-Fi accessory that lets you control the mount using your iPad or other iOS devices. The Wi-Fi accessory includes the ICCD camera and a specialized cable. Most of the features in the app are the same as the hand controller, and, like the hand controller, you can use the Moon and/or a planet, and you’re ready to go. Easy-breezy, nice and easy!