Astronomy tests Meade’s new 10-inch SCT

Great optics, high-quality construction, and serious aperture make the LX850 a winner. by Craig and Tammy Temple

ne thing we have learned in this hobby is that the mount is a setup’s most critical component. Even the finest telescope can produce poor results if it rides atop an inferior mount. Unfortunately, big, hefty mounts that offer precise guiding and carry large optical tube assemblies (OTAs) can get quite expensive. If you are looking for these features in an integrated package at an affordable price, the Meade LX850 may be for you.

The shipment has arrived

We were excited to test the LX850 package, which contains the Meade 10-inch Advanced Coma Free Schmidt-Cassegrain telescope (OTA), an adjustable height tripod, the Meade 10-inch Advanced Coma Free Schmidt-Cassegrain telescope optical tube assembly, a heavy-duty mount, an ultra-stable tripod, the StarLock integrated guider, and more.

Preparing for first light

As many in this great hobby know, days of clouds have a way of arriving the same time as new gear. Much to our surprise, though, our skies cleared, so we went through the steps to ready the system for use. As with any setup, balance plays an integral part in the mount’s performance. So we balanced just as we would have with our own equipment, with one difference — the clutches on the mount’s performance. The process was straightforward, however, and relatively easy. In fact, the most difficult and time-consuming part was centering Polaris (Alpha [α] Ursae Minoris) in an eyepiece using only the azimuth and elevation knobs.

First light — visually

Eager to test the drive’s accuracy and see what the optics had to offer, we slewed the LX850 to our first target, ringed Saturn. Initially, we thought something went awry when the hand paddle displayed “Auto Ctr Star.” We soon realized that StarLock was refining the go-to to make locating future objects more accurate. Once on Saturn, StarLock located a star within the field of view and started guiding. This was a real treat because it kept Saturn centered while we enjoyed the great views the optics afforded.

With the included eyepieces, Saturn was clear, and we could see the Cassini Division easily, as well as four of the planet’s moons. We tried a variety of eyepieces and Barlow lenses, and all views were great. To really put the optics to the test, we slewed to Altair (Beta [β] Cygni). Once again, a dead-on go-to! The scope split this beautiful double star nicely, and the blue and gold colors were remarkable.

First light — imaging

After many subsequent cloudy nights, the skies cleared for some imaging. We set up the LX850, performed polar alignment and go-to-calibration, connected our CCD camera, and balanced everything on the mount. Because we would be autoguiding while imaging, the Auto Rate Calibration (ARC) feature intrigued us.

Using it, StarLock monitored an eastern star near the celestial equator, checked various guide rates in an effort to determine which would be best for current conditions, and then set that rate based on the ARC’s findings. This is a fine feature and works well to get you moving, but we found that we had to adjust the rate slightly as our target traversed the sky.

Then we learned that a prerequisite to using the ARC is to perform the Permanent Periodic Error Correction (PPEC). It’s another relatively simple automated process, and it took us only around 25 minutes for three iterations. Since the PPEC is “permanent,” you don’t have to repeat it. Note, however, that additional runs will refresh the correction.

Next, we slewed to the 1st-magnitude star Vega (Alpha Lyrae) and focused using the microfocuser. Heat it provided nice resolution with no slippage, it did sag a bit under our big camera’s weight, so we had to remove the microfocuser from the imaging setup. One other “uh-oh” was finding that initial polar alignment and guiding were not enough to give us nice round stars, so we delved into the telescope’s auto drift alignment.

We were pleasantly surprised when we saw how Meade had made this process almost as easy as falling off a log. We simply used the hand paddle to select the drift alignment feature. The mount slewed to a star near the southern meridian, monitored its drift for a bit, then displayed the direction and number of turns we needed to make to the azimuth knob.

After we made the adjustment and indicated with the hand paddle that the adjustment was done, StarLock monitored the star’s drift again and indicated the turns needed, if any. This continued until it displayed “No turns needed,” at which point we used the hand paddle to indicate completion. The mount then slewed to an eastern star near the celestial equator and followed the same process, only now having us make turns to the elevation knob. Once “No turns needed” appeared again, drift alignment was complete.

We ran our imaging sessions like usual, with a few exceptions. Having removed the microfocuser, we focused by hand using a Bahtinov mask. This task was easy because the manual focuser was smooth yet firm enough to find that sweet spot. Guiding was a bit different from our norm, but we succeeded using StarLock and the drift for a bit different from our norm, but we succeeded using StarLock and the AutoDrift alignment.

Summing up the system

The Meade LX850 is a high-quality package for both the visual observer and imager. The optics are terrific, the drive is precise, and the fit, finish, and operation are top-notch. Although we had a few issues with certain minor aspects, we attribute them to the lack of hands-on time to flesh them out.

Finally, although Meade lists this as a portable system, we feel the LX850 would perform best in a permanent setup. It’s a robust system with great automated features in an affordable package.