We check out an updated tracking mount designed for astrophotographers on the go

IOPTRON'S NEW SKYTRACKER PRO

Text and photography by TONY PUERZER

IT'S A TESTAMENT TO THE GROWING POPULARITY of DSLR-based astrophotography that iOptron has updated its popular SkyTracker camera mount. At first glance, the new SkyTracker Pro looks radically different from its predecessor, but overall, the changes are evolutionary rather than revolutionary. And that's a good thing. The original SkyTracker is an excellent product. (As this review was being prepared, both models were still available.)

Although both SkyTrackers are similar in weight and size, the new unit's two-piece design is an improvement over the original, allowing you to pack the individual components more easily into the nooks and crannies of your carry-on luggage or camera bag. The parts are easily connected via a sturdy Vixen-style dovetail plate.

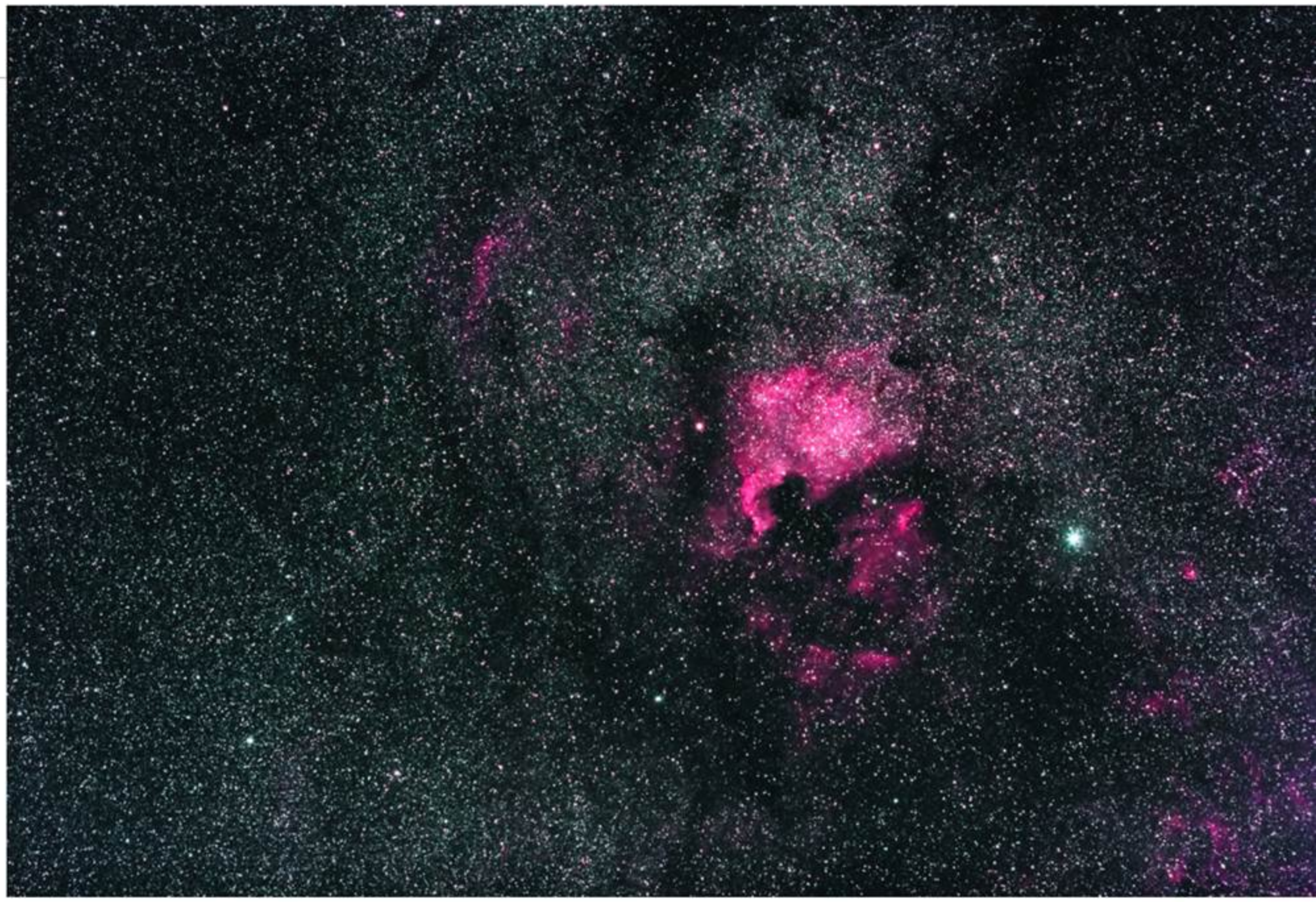
As I wrote in my "Capturing the Universe" column for the November/December 2016 issue (page 16), compared with a fixed tripod, a motorized platform allows you to take much longer exposures and utilize longer-focal-length lenses to produce images with pinpoint stars instead of streaks. Of course, if the unit doesn't work properly, all bets are off.

EASY ALIGNMENT

To track the stars accurately, a mount must be polar-aligned. The SkyTracker Pro has a number of features that make this task easier. Its altazimuth base has degree markings that aid latitude adjustment and a pair of knobs to allow precise fine-tuning in azimuth. And because the base is removable, you can mount the head (without the base) directly to any sturdy camera tripod, although this means going without the Pro's fine-adjustment controls.

Like many of iOptron's larger equatorial mounts, this portable tracker utilizes the company's excellent AccuAlign polar scope to obtain alignment in both the northern and southern hemispheres. The optional iOptron polar scope software app (available from the iTunes store at a cost of US$2.79) provides a graphical reference showing where Polaris (or sigma Octantis, if in the southern hemisphere) should be placed on the polar scope's reticle for a specific time, date and location. The reticle's illumination

ASTROPHOTOGRAPHY ON THE GO The SkyTracker Pro mount, top left, breaks down into two components—a motorized tracker and an adjustable base—joined together with a Vixen-style dovetail plate. The author attached his Canon 60D camera and 50mm lens via the sturdy, optional iOptron ball head. The base features fine-altitude and azimuth adjustments for precise polar alignment. Left: This view of the south side of the SkyTracker Pro shows the power switch, 180x slew button (above the pair of opposing arrow symbols), polar-scope illumination adjustment button, tracking-speed selector and north/south switch. The much-improved azimuth adjustment plate, with its fine-adjustment knobs, is similar to higher-end iOptron mounts.



NORTH AMERICA NEBULA For this image of the region near Deneb, in Cygnus, the author equipped his modified Canon 60D camera with an 85mm f/2.8 lens and an Astronomik CLS light-pollution filter. The final image is a stack of 13, 2-minute exposures recorded at ISO 800 under light-polluted skies.

can be set to eight different brightness levels using a small button on the mount's rear control panel.

While working with the unit, I noticed that in certain orientations, my camera body or lens blocked the polar scope's view. This is mostly an issue when the camera is aimed toward the extreme eastern and western parts of the sky and is easy to overcome by temporarily repositioning the camera if you need to recheck alignment.

POWERING UP

Where the original SkyTracker was powered by four AA cells, the Pro model has a built-in lithium polymer (LiPo) battery rated for 24 hours' operation at 20°C. This new power source is a mixed blessing. Yes, it's less fiddly than installing (or replacing) a set of AAs, but if you forget to recharge the unit prior to an imaging session, you can't simply pop in a set of fresh batteries and keep going.

The built-in battery is charged by attaching the included micro-USB cable to a USB power supply, such as a car cigarette-socket adapter, a laptop computer or a stand-alone "wall-wart" style charger. Although none of these are part of the SkyTracker Pro package, chances are your cellphone came with one. On one imaging session, I used a tiny cellphone power bank connected to the mount's USB port, which allowed the internal battery to stay fully charged while the mount was in use. A small red LED serves as a power meter. It blinks rapidly when the battery is fully charged, changes to solid red at about 80 percent, then switches to slow blinking when the charge is nearly exhausted.

While LiPo batteries have a great

IOPTRON SKYTRACKER PRO CAMERA MOUNT

Approximate retail price: Cdn$390
Available from iOptron dealers across Canada
www.ioptron.com
Summary: A compact, portable mount that's well suited to wide-field astrophotography

PLUSES
- Extremely portable, two-part design
- AccuAlign polar scope for easy alignment
- 180x bidirectional fast-slew button

PROBLEMS
- Built-in battery a mixed blessing
- Too many locking knobs on the optional iOptron ball head

M42 IN ORION The SkyTracker Pro performed well even when a heavy 300mm f/4 lens was used. This image is a crop (showing 60 percent of the original frame) of a single 1-minute exposure at ISO 1600 and shows star images that are acceptably round.

energy-to-weight ratio, they do require more care than regular alkaline batteries. For example, iOptron cautions against charging the unit at temperatures below freezing—a restriction that may be especially important during Canadian winters. It's also worth noting that while iOptron warranties the SkyTracker Pro for one year, the battery carries only a 90-day warranty. (Replacement batteries are available from iOptron for US$19.95.)

IN THE FIELD

Our review sample was supplied with a beautifully finished and silky smooth iOptron-branded camera ball head (a US$58 option). It was certainly up to the task of supporting any camera and lens combination falling within the mount's recommended 1.2-kilogram payload capacity. (This increases to three kilograms with the optional counterweight balance kit, sold for US$79.) The iOptron ball head has separate knobs for locking the overall motion, adjusting friction, controlling the pan motion and securing the Arca-Swiss compatible quick-release plate. Add these to the knobs found on the SkyTracker Pro itself, and you have a mount bristling with a half-dozen very similar controls. Finding the right one in the dark can be difficult—especially for new users. With simplicity and ease of use in mind, I'd prefer a ball head with a single locking lever.

I tested the SkyTracker Pro with a variety of lenses, ranging from a 10mm wide-angle to a 300mm telephoto. The maximum exposure time I obtained without appreciable star trailing was approximately 15 minutes with wide-angle lenses and roughly two minutes with a short telephoto lens. Of course, the key phrase here is "appreciable star trailing." The degree to which star images are judged "good enough" is subjective and depends a great deal on the resolution of your computer screen, plus how much you crop the final photo. Suffice it to say, I'm confident the mount will produce great results, provided the camera and lens combinations fall within the manufacturer's specified payload limits.

GETTING ON TRACK

As well as the usual sidereal rate, the SkyTracker Pro offers several additional tracking speeds, including half the sidereal rate, which nocturnal landscape photographers can use to "split the difference" between nice round stars and a reasonably unblurred foreground. But I'm less convinced about the real-world utility of the new solar and lunar tracking rates. Any camera and

lens combination that would benefit from these settings is well outside the maximum weight capacity of this mount. However, the inclusion of a new 180x right ascension, fast-slew button is extremely useful and makes the precise framing of your subject a breeze. Of course, declination adjustments still need to be made manually with the ball head.

Finally, it's worth noting that our review sample did exhibit an odd quirk when I first started using it. Initially, the mount failed to track very well. The accuracy improved steadily over the first 20 minutes of use, after which it continued to work perfectly. I was never able to discover the cause of this behaviour, and it may have been unique to this particular unit.

In addition to its photographic capabilities, the SkyTracker Pro can be used visually with any small scope equipped with a ¼-20 threaded socket. I attached my Coronado P.S.T. solar scope to the ball head and was impressed that the mount managed to keep the Sun in the field of a 12mm eyepiece for several hours. This suggests the possibility of using the mount as part of a small grab-and-go setup, so long as the telescope itself isn't too heavy.

Overall, the new SkyTracker Pro is a worthy successor to the original. Should owners of the earlier model upgrade? In my view, the differences aren't sufficiently compelling to make the change worthwhile. But if you're in the market for a highly portable tracking mount, the SkyTracker Pro is an excellent choice. ✦

Tony Puerzer writes this magazine's astrophotography column, "Capturing the Universe."

ALTERNATE USE The author used his Coronado solar telescope to test the mount's solar tracking rate. This setup worked well despite exceeding the recommended weight limit for the mount.