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Sky-Watcher's New Modular Lightweight Mount, the EQM-35 Pro

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By: Alan Dyer

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The EQM-35 Pro mount uses an outboard electronic box (inset) that includes plugs for controls and accessories.

All images by Alan Dyer (amazingsky.com)

The new version of **Sky-Watcher's** EQM-35, the smallest German equatorial mount, adds a modular construction and is ideal for entry-level astrophotography.

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Plus: Good tracking and GoTo accuracy; can be configured as a star tracker

Minus: No polar scope illumination; outboard right ascension (RA) and declination cables

Summary: The EQM-35 provides a solid but economical mount for small scopes for both visual use and photography.

Who Is It For? Anyone wanting to get into deep sky imaging at an entry-level cost.

Getting into astrophotography usually requires selecting a “mix-and-match” system, meaning buying the mount and telescope separately, often from different manufacturers. We have many good mounts to pick from these days, but the latest version of Sky-Watcher's venerable EQ-3 is attractive for its portability and affordable price, yet has good load-carrying capacity and accurate tracking.

The EQM-35 Pro differs from the original EQ-3 in being modular. The declination axis can be unbolted from the head and replaced with a basic Vixen-standard dovetail plate that is included in the package. That in turn can then accept the same accessories made for Sky-Watcher's popular Star Adventurer trackers, such as the declination bracket and counterweight kit, items you would have to buy separately for \$70.

Why replace one declination axis that has electric slewing and GoTo motions with another that doesn't? And at extra cost? The reason would be to save weight (about 8.8 pounds or 4 kg), a substantial saving for airline travel. On the other hand, for a travel mount, the even lighter Star Adventurer on a smaller, lighter camera tripod is likely a better choice.

So I question how much the modularity of the EQM-35 will be used by most buyers. But it's there as an option. I performed all my testing with the mount in its full German

it's there as an option. I performed all my testing with the mount in its full German equatorial configuration, just as it arrives out of the box.

The mount has an excellent polar alignment scope in the polar axis with a reticle; the reticle includes the star pattern around Sigma Octantis to aid alignment in the southern hemisphere. The mount head has good altitude and azimuth adjustments on the base for aiming the polar axis precisely at the celestial pole.

With the mount accurately polar aligned, I shot a series three dozen unguided 2-minute exposures through a **William Optics** 51mm RedCat, a little astrograph with a focal length of 250mm. About 40 percent of the frames were tracked well enough to be usable for stacking, another 30 percent were trailed slightly in right ascension (east-west), while the remaining 30 percent were trailed too badly to be usable at all.



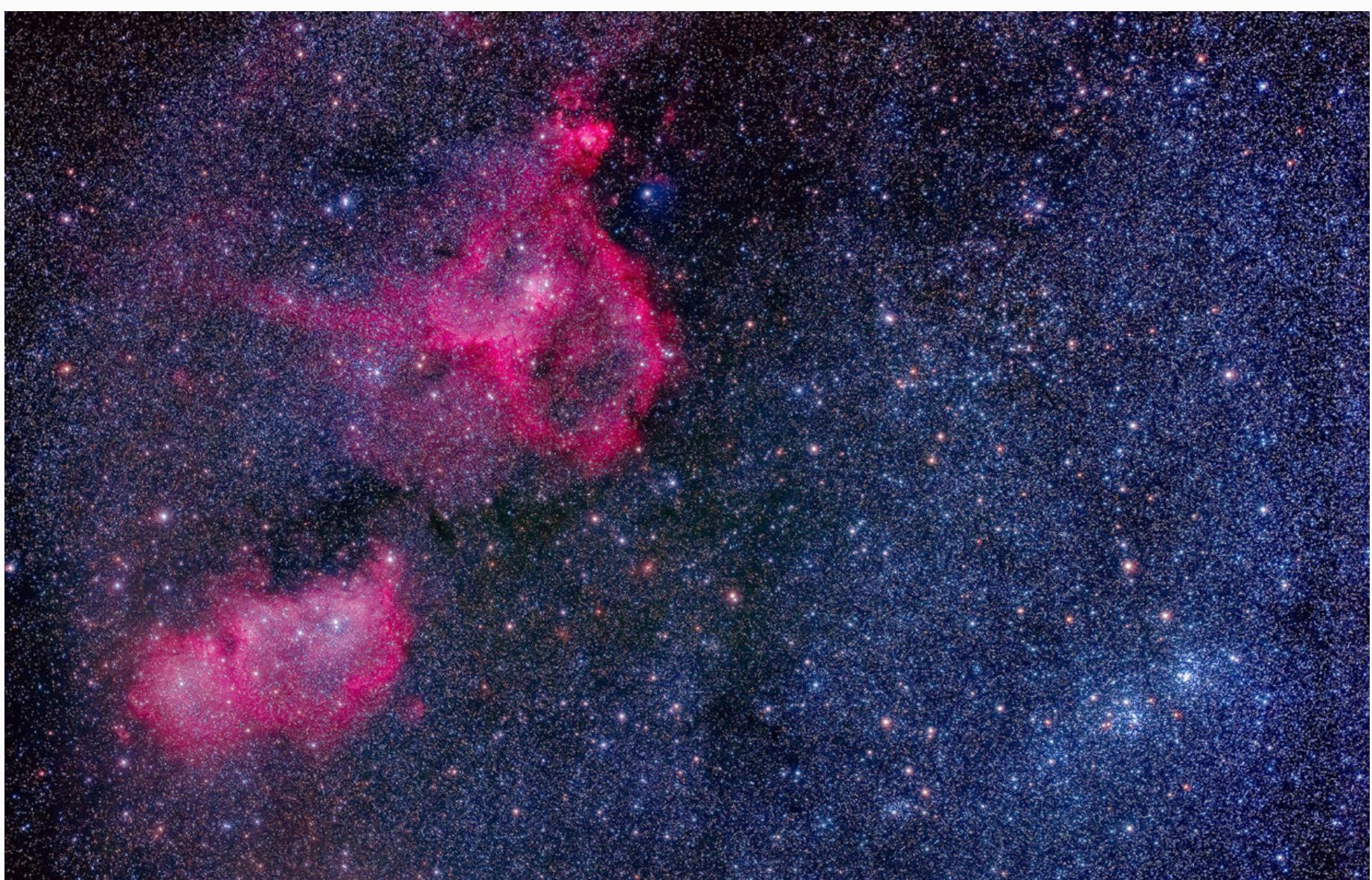
The EQM-35 is ideal for small astrographs such as the William Optics RedCat 51mm, shown here with a ZWO ASIair and ZWO guidescope and camera for autoguiding.

This ratio is about what I would expect from a small mount with its inevitably small gears. As such, the mount can be used to get started in deep sky imaging without the complexity and expense of autoguiding.

However, with any mount, the best results require autoguiding and multi-minute

exposures. The EQM-35 worked well in my autoguiding tests, using a **ZWO ASI120MM** guide camera and ZWO ASIair Pro control box to perform the guiding through the mount's ST-4 autoguider port. While the guiding graph looked a little ragged in each axis, the resulting images with the RedCat had sharp, pinpoint stars.

The mount's rated payload capacity is 22 pounds. However, a rule of thumb for astrophotography is to cut any such payload specification in half. As such, the EQM-35 will be ideal for deep sky imaging with up to an 80mm refractor. The mount includes two 7.9-pound (3.6 kg) counterweights, but most setups will need only one.



Taken with the RedCat on the EQM-35, this test image of the Heart and Soul Nebulas and the Double Cluster is a stack of nine 8-minute autoguided exposures. No filter. Red-sensitive Canon EOS Ra, set at ISO 1600.

The well-honed SynScan GoTo system works great, with accurate pointing once the mount is "GoTo aligned" on three stars. The new V5 hand controllers now included with Sky-Watcher mounts have a USB port (at last!), instead of the old serial telephone-style jack, for ease of connecting to a computer if desired.

The EQM-35 does have its deficiencies. Unlike most larger mounts, the electronics are not inside the mount head but in an outboard box, requiring cables to connect from the box to each of the two motors. The declination cable can sometimes snag. There is also no built-in illumination for the polar alignment scope, nor any separate illuminator supplied.

However, if you are looking for a small, affordable mount to serve as the foundation for an entry-level astrophoto system, I can recommend the EQM-35. For shooting through a small telescope the EQM-35's higher carrying capacity plus its electric slow motions

small telescope, the EQM-35's higher carrying capacity, plus its electric slow motions, dual-axis auto-guiding and GoTo system are far superior to using a small tracker such as [iOptron's SkyGuider Pro](#) or Sky-Watcher's own Star Adventurer.

While both are great little trackers, for shooting through any optics longer than 135mm, a full German equatorial mount with GoTo, like the EQM-35, make finding, framing, and accurately guiding deep sky objects so much easier than with a star tracker.

However, if your interest is just for visual astronomy, the EQM-35 is also a good choice, able to handle short-focus refractors up to 4-inch (100mm) aperture, or 5-inch (125mm) Maksutovs and 6-inch (150mm) Schmidt-Cassegrain tube assemblies.

Indeed, the EQM-35 can serve as a versatile platform for a range of small visual and photo scopes, and all for \$725. This is not much more than many beginners pay for a sky tracker plus a good tripod, especially after adding after-market upgrades such as improved equatorial wedges and mounting plates often recommended by tracker evangelists on YouTube.

By contrast, the EQM-35 Pro is ready to use out of the box, as a portable GoTo mount for visual use and as a solid base for an affordable deep sky imaging system.

MSRP: \$725

Website: www.skywatcher.com



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About Alan Dyer

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Alan Dyer is an astrophotographer and astronomy author based in Alberta, Canada. His website at www.amazingsky.com has galleries of his images, plus links to his product review blog posts, video tutorials, and ebooks on astrophotography.

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