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Make Your Stars Shine: Three Starglow Filters Compared

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Diffusion filters like one from this trio are a recommended addition to any astrophoto kit bag, for accentuating stars and constellations. Credit: Alan Dyer

Astrophotographers shooting nightscapes and tracked constellation portraits use diffusion filters to make stars “pop.” Here are three filters that work well. The Alyn Wallace/Kase is the costliest of the trio, with the Kase and Tiffen filters producing the strongest effect, perhaps too strong. Read on for more.

Lenses today have become too sharp! When shooting wide starfields, bright stars don’t record looking much brighter than the reams of moderate brightness background stars. In any exposures over a few seconds, stars saturate the camera’s pixels, making bright stars no more obvious than their dimmer neighbors. Our astro images don’t record the dynamic range in brightness our eyes see.

The only way to make the brightest stars stand out from the rest is to do what all star atlas publishers do — make the bright stars bigger.

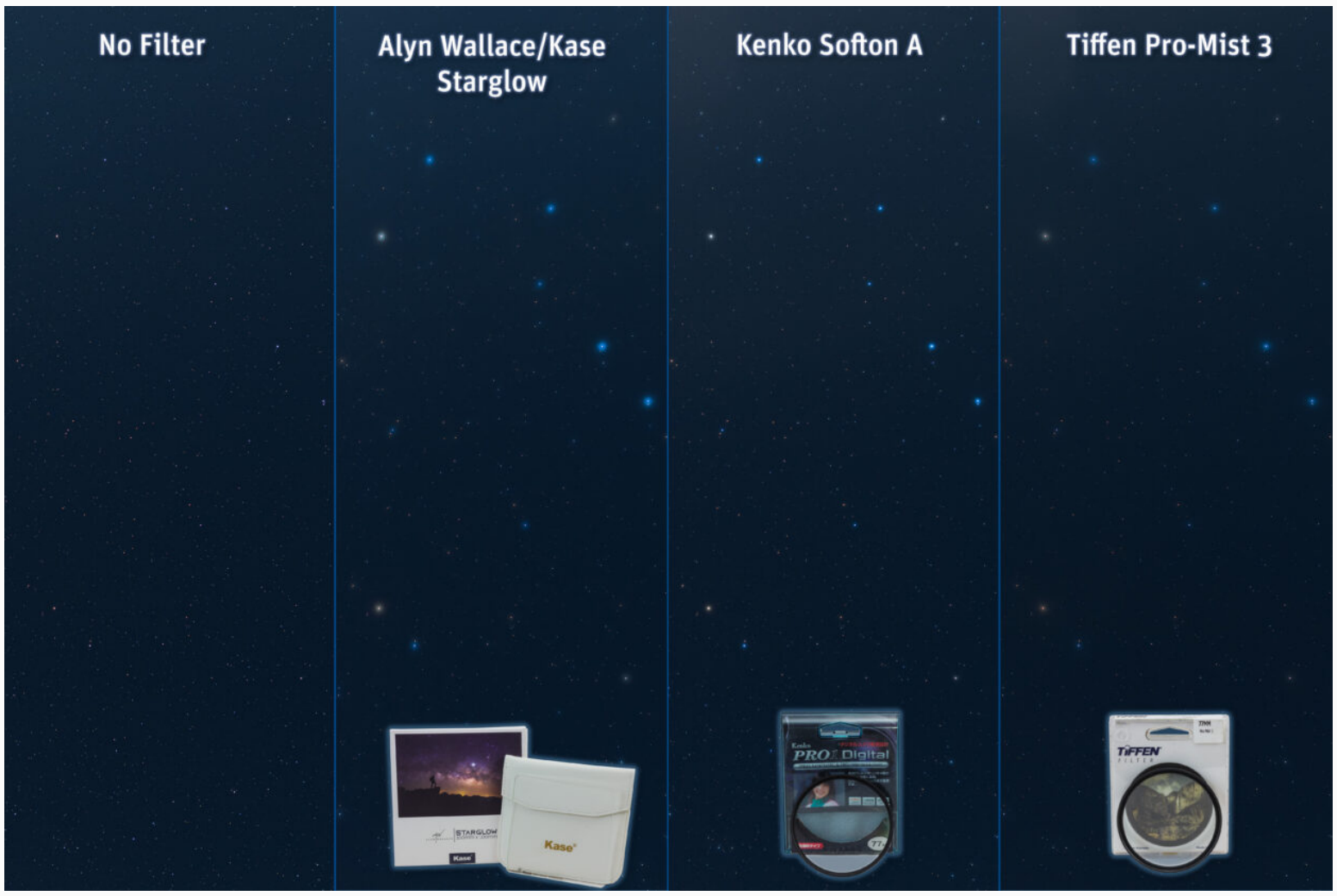
100mm Mounting System The Alyn Wallace/Kase filter requires mounting in a user-supplied 100mm filter holder. This unit is from PhotoRepublik, but there are many options. Credit Alan Dyer

That’s where the sharpness of lenses works against us. The solution is to purposely diffuse the image using a physical filter, adding the fuzzy effect of a lens rife with spherical aberration or soft focus, but on demand in a controlled manner. Portrait photographers do this. Indeed, two of the filters on test, the Kenko and Tiffen, are made for that purpose. But all work well on stars.

You might wonder why use a filter on the lens? Why not just apply an effect in processing? I've tried, but I've had no success with any of Photoshop's blur filters or "Orton glow" actions. None work as well as a physical filter in the field.

The Filter Trio

A soft focus filter made for astrophotography is from the U.K. filter maker Kase and sold as the Starglow. Alyn Wallace, a well known astrophotographer and YouTuber, helped design this filter, lending his name to the product. Confusingly, Kase also sells an "AstroBlast" filter to produce a similar effect, but Kase says it is not the same filter.



Fuzzy Dippers This compares the three diffusion filters with an unfiltered image, showing how the Dipper stars stand out better with any of the three filters. Credit: Alan Dyer

The Starglow is available only as an unmounted 100mm square filter, intended to slide into any standard 100mm filter holder, such as sold by Kase, and many other filter makers.

If you have such a filter holder you're all set. If not, buying one will cost another $150 or so, on top of the £165 (approx. $230 U.S.) for the Starglow which, as best I can determine, is available only directly from Kase in the U.K., adding shipping to the cost.

This makes the Starglow the most costly option by far. But its design allows the one filter to be used on a variety of lenses with different filter threads, including wide-angle lenses requiring large filters. In a pinch, it is even possible to simply hold the Starglow in front of very wide lenses that don't accept filters.

I tested the new Starglow against two other older filters. I've shot with the Kenko Softon-A filter for years, having purchased it originally from AstroHutech. They no longer sell it. While Kenko's U.S. website fails to list the Softon, it is promoted at Kenko's global

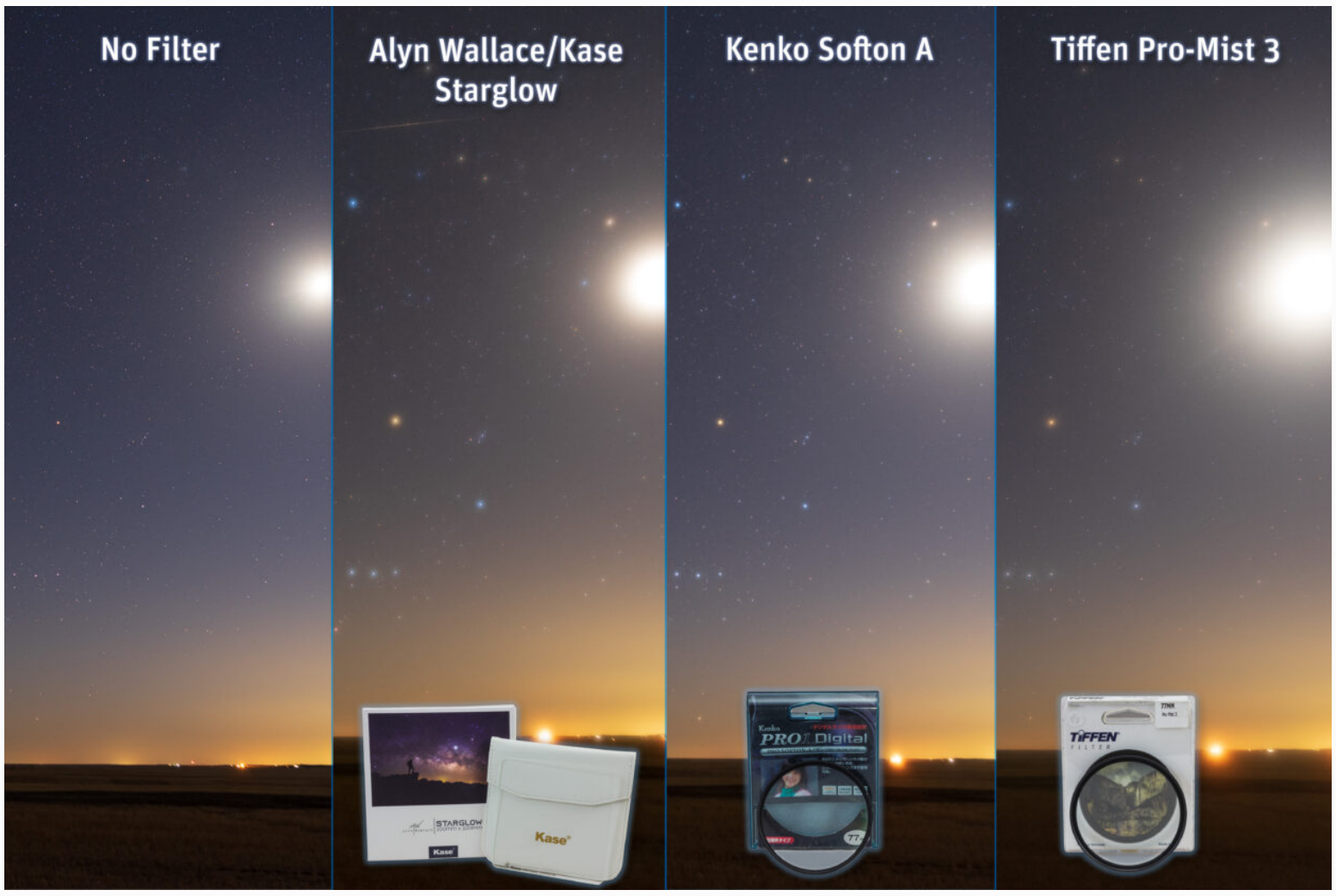
website as ideal for astrophotography, and amazon.com does list it. So it can be found, but appears to be sold primarily in Japan. The Hoya Pro1D Softon-A seems to be identical to the Kenko but it, too, is hard to find.
[See https://hoyafilter.com/product/pro1d_softon_a/]

While more widely available, ordering any Tiffen diffusion filter is confusing — Tiffen offers so many variations, plus strengths within each type. I took a chance and ordered the Tiffen Pro-Mist 3, but the same filter is available in strengths from 1/8 to 5. While the Pro-Mist 3 worked well, a milder Pro-Mist 1 or 2 might be a better choice for a more subtle effect.

Both the Kenko and Tiffen filters are screw-on filters, so have to be purchased in the diameter your lenses require. Most of my lenses accept 77mm filters. To attach a 77mm filter to the few lenses I have that need a 72mm filter I use a low-cost step-down ring.

Star Tests

All three filters did a good job accentuating bright stars, adding diffuse glows proportional in size to the stars' magnitudes, just what Photoshop filters aren't able to accomplish. The glows made star colors more obvious, and allowed constellation patterns to stand out.



Fuzzy Nightscape The Alyn Wallace Starglow and Tiffen Pro-Mist provide a greater effect than the Kenko Softon. The bright blob is the Moon in these tracked images of the winter stars setting.

The Alyn Wallace and Tiffen filters had a similar and quite strong level of diffusion effect. I find both a little too strong, but I'm comparing them to the milder Kenko I've been used to. Indeed, Alyn Wallace suggests applying a Dehaze adjustment to filtered images in processing to dial back the effect.

By comparison, the Kenko added a smaller glow around stars, though the Alyn Wallace and Tiffen filters each retained more of the central sharp star image embedded in a larger glow. The Tiffen tended to wipe out fainter stars more than the others, thus my advice to buy a lower strength Pro-Mist.

Stellar Closeups This zooms in on Betelgeuse in the above image set, to show the diffraction spikes added by the Starglow and Pro-Mist, versus the smaller but softer glow of the Kenko Softon. Credit: Alan Dyer

The Alyn Wallace Starglow filter, and to a lesser extent the Tiffen Pro-Mist, added lots of spiky effects around stars; the Kenko's glow was softer and more uniform, which I prefer. But some astrophotographers like the random diffraction spikes added by the Starglow.

The Starglow filter's slide-in design allows it to be pulled part way up so its effect applies only to the sky and not to the ground. That might be useful for single-image nightscapes, but will work well only if your horizon is flat.

I never shoot just filtered images. When using any type of diffusion filter I prefer to shoot images both with and without the filter, to layer and blend them later in processing. That gives me full control over the degree and location of the glow effect, and not depend on what came out of the camera. However, layering later works best when shooting images using a star tracker, so the filtered and unfiltered stars align and register.

In conclusion, the Alyn Wallace/Kase Starglow filter works as advertised and its 100mm square design might prove more versatile in your setup, justifying its cost. The Tiffen Pro-Mist provides a similar significant level of effect at lower cost, while the Kenko Softon-A (or Hoya Softon-A), if you can find it, provides a gentler effect.

Plus: All produce excellent soft and glowing stars

Minus: Alyn Wallace/Kase filter requires a 100mm filter holder system

Alyn Wallace/Kase Starglow Filter
MSRP: £165 (unmounted 100mm square)
Website: www.kasefilters.com

Kenko RealPro Softon-A Filter
MSRP: $95
Website: www.kenkoglobal.com

Tiffen Pro-Mist 3 Filter
MSRP: $120 (77mm size)
Website: www.tiffen.com

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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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