

7 Tips *for* Night Sky Photography

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1. Make the mode Manual

In auto or semi-auto modes, our cameras make adjustments based on what they think we want. However, when shooting night skies, our cameras tend to be terrible mind readers! For night photography, you've got to take control & shoot in Manual mode.

2. Do the math to get points

Want your stars to appear as points or trails? To get points, the general rule is to divide your focal length into 500 to determine shutter speed. For example: with a 20mm lens, the math looks like this: $500/20=25$. Note that this is the *maximum* shutter speed to retain the stars as points of light. That means your stars will start to streak with a shutter speed longer than 25 seconds. (*Refer to Tip #5*)

3. Construct star trails

In the film days you could just lock your shutter open & leave it to record the stars as arcs. With digital you can still do that, but I don't recommend it; when a shutter's open for a long period the sensor heats up & produces hot pixels. (*This is a separate issue from the usual high ISO noise.*) Instead, construct your digital star trails by shooting a series of 30-second exposures over at least a 45-minute period. Combine them into one image using Photoshop, other software, or a website. My fav, [StarStax](http://StarStax.com), is free!

4. Manual focus is a must!

Once it's dark enough to photograph the Milky Way it'll be too dark for autofocus to work. Can you just set your lens to the infinity mark? This does often work, but doesn't always give you the sharpest focus. During daylight, focus on a distant subject to see if it lines up with the infinity mark. If not, either tape the focus ring into position or make your own mark. For another strategy, employ Live View & magnify the display as much as possible. Then manually focus until the stars are sharp.

5. Settings

The formula for obtaining a shutter speed in Tip #2 above marks the max for capturing stars as points. But you can choose a shorter exposure. After about 10 seconds the starlight your sensor has captured won't shine any brighter; however, the longer your shutter remains open the more sky glow you'll collect.

Regarding your aperture: keep it wide open. Hopefully, you have a pretty fast lens (*an f/2.8 makes a good choice*).

ISO is your main brightness control. I find ISO 3200 works pretty well. Remember—the beauty of digital is the ease of experimentation! Try both higher & lower ISO's to discover what **you** like.

For white balance, I like 4000K. If shooting RAW leave your white balance on auto & change it during post-processing. Again, experiment to determine the white balance that looks right to **you**.

6. Light painting

When shooting the heavens consider adding an earth-bound element to increase image interest. Foreground items will need some light unless you're styling for a silhouette. Light painting's lots of fun & easy to do. A simple flashlight works wonders. Keep that light moving & don't let it stay in one spot for too long.

Light painting can cause depth-of-field issues since you're shooting wide open & focused at infinity. With a lens in the 20mm-24mm range, there's a good chance the hyperfocal distance will make your foreground element acceptably sharp. Find the hyperfocal distance for your lens at www.dofmaster.com.

7. Equipment

When it comes to which camera to use high ISO performance is key! If your camera's less than 5 years old it'll most likely work just fine.

For making Milky Way shots, a lens in the 16mm--24mm range is your best bet. The faster the better—f/4 will work, but f/2.8 or faster is better. Working with these kinds of exposure times makes a tripod non-negotiable.

A headlamp keeps your hands free to operate your camera. To preserve your night vision, choose a headlamp with a red LED.

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Award-winning naturalist photographer, Jeff Parker, leads friendly & informative photo tours & workshops focused on the flora & fauna of North, Central & South America – & now parts of Europe, too!

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