

Astrophotography: Why Bother?

Understanding why we create astronomical images can be more important than knowing how.

With all the jaw-dropping images now being produced by the James Webb Space Telescope, you might wonder if amateur astrophotography still makes sense as a hobby. How can anything you create hope to compete with shots from a 10-billion-dollar telescope orbiting a million miles out in space?

In reality, photos captured by amateur and professional astronomers complement one another rather than compete. The ones acquired with large scientific instruments may look beauti-

ful, but their core purpose is to collect astronomical data. In contrast, we amateur astrophotographers have the freedom to create whatever images we want, limited only by our skills and creativity. Plus, we're able to include foreground landscapes in our shots — something professional observatory operators can only dream about.

You may also wonder if it's worth capturing your own images given the vast numbers already created by amateur astrophotographers. The internet

is positively awash in impressive shots from an uncountable number of talented and well-equipped enthusiasts. What can you possibly add to that? Why should you even try? I think these are important questions. How you answer them can help provide inspiration and give your efforts a sense of purpose.

Getting Personal

A big part of the "why" of astrophotography comes down to the special relationship you have with the pic-



GREEN SKY AT NIGHT High, thin clouds rolled in and blurred the auroral display but added an otherworldly effect for this photo of the waterfalls near Kirkjufell Mountain in Iceland. Viewing the image today brings back fond memories of the amazing locations and wonderful people the author met on his trip.

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tures you take. For example, a random photo of the Andromeda Galaxy (M31) downloaded from the internet may look beautiful, but you won't have any meaningful personal connection to it — it's simply a photo of a specific object. Conversely, the images that you create are inextricably linked to the exact moment in time when you opened your camera's shutter to start the exposure. The resulting image captures not only an object but also an *experience*.

Our images have the power to remind us of events in our lives we may otherwise have forgotten. In this way, each photograph works like a little time machine, conjuring up vivid memories of the sights, sounds, and emotions we felt at a specific point in space and time. For example, I recently came across some photos I took during the 2017 total solar eclipse. Instantly, I was transported back to a dry, grassy field in Oregon. A chill came over me as I remembered the sudden change in air temperature when the world around me turned an inky blue and a soot-black hole hung in the sky where the Sun so recently shined. I remembered being surrounded by a light so metallic that I could almost taste it. There were the fleeting shadow bands on the ground and the sounds of distant birds. And with a startling suddenness — it was over. I'm so thankful I have these photos to revive my memories of that glorious, awe-inspiring day.

Experience and Reward

Of course, there's a lot more to imaging than just creating memories and experiences. Astrophotography requires incredible patience, skill, and technical know-how. Sometimes it can be a difficult and frustrating pursuit. It can also be time-consuming. Often, you'll need to spend hours traveling to a specific location, setting up your gear, and then making the exposure. Processing your pictures often takes an equivalent amount of time as you slowly tease subtle details out of the raw images. But when you step back to admire your finished work, you'll feel a great sense of pride and accomplishment. The final

image is a well-deserved reward for all your effort.

I find that mixing up approaches is also a big help. Think of your camera as a passport to new perspectives and opportunities. Working as a professional photographer, editorial assignments were the most exciting part of my job. By creating an astrophotographic "self-assignment," I get a similar kind of inspiration that provides me with something to look forward to. An organized approach can help you focus your efforts and prioritize your time, which will dramatically increase your chances of success.

If you're still having trouble getting motivated, try thinking forward a few years and imagine the images you aspire to create. Maybe your self-assignment is a dramatic, wide-field shot of the Milky Way arching over a desert landscape. A closeup of solar prominences during a total eclipse. Or perhaps the northern lights dancing over a glacial lagoon. Having some kind of photographic goal can be the necessary fuel to get your creative motor running.

Even city-bound photographers can create stunning images showing the Sun, Moon, and planets. Each of these



▲ **ON THE CENTERLINE** Experienced eclipse chasers will counsel you to leave your camera at home and simply enjoy the spectacle visually. Obviously, the author didn't heed this advice. Here he is with some of the equipment he used in 2017, including a camera with a wide-angle lens on a tripod, plus two equatorial mounts carrying cameras mounted to a Celestron C6 telescope and a Canon 300-mm lens.

subjects presents its own unique set of challenges, but great results are certainly possible. Check out the superb solar system work produced by Damian Peach and Christopher Go if you want some inspiration — neither lives in a dark, rural countryside.

Your choice of equipment can also provide motivation. From a technological perspective, now is the best time in history to be an amateur astrophotographer. Computers and digital-imaging



▲ **SURPLUS STUNNER** Does the world really need another photo of the Andromeda Galaxy? Probably not. But creating your own image of this classic target can be incredibly rewarding, nonetheless. This tracked portrait of M31 combines nineteen, 4-minute exposures, each captured with a Canon EF 300-mm f/4L IS USM lens at f/4 and attached to an astro-modified Canon EOS 60D DSLR camera set to ISO 1600.



CANNON BEACH MILKY WAY The author had long wanted to capture the Milky Way over the ocean. Cannon Beach, Oregon, proved to be the perfect spot to realize this “self-assignment.” Although the location is fairly dark, nearby streetlights were bright enough to illuminate the large sea stack rock and the small waves rolling in.

are dedicated and passionate online communities of enthusiasts from all over the world that can help guide you. Studying the work of other imagers and asking questions will expose you to new techniques and approaches to composition. Identify the elements you admire in the works of others and consider how you can incorporate them into your own images. As your skills evolve, increasingly you’ll be able to add your own personal twist to the photos you create.

Sharing your shots online is a great way to connect with other astrophotographers and can even serve as a form of public outreach. When Ansel Adams created his dramatic landscape images, they demonstrated the importance of preserving and expanding the U.S. National Park System. Today, the night sky also needs protection. It’s under siege from artificial lighting and increased satellite traffic. Sharing your images online will increase public awareness of the value of preserving truly dark sky locations. Conceivably, one of your photos might even inspire a stranger to think more deeply about the universe and their place within it.

As the years go by, you’ll be able to look back at the portfolio of images you’ve created. Undoubtedly, as your skills increase, you’ll see steady improvement — your most recent photos will be better than your first ones. This is one reason many astrophotographers revisit the same targets year after year.

Astrophotography requires a working knowledge of the phases of the Moon and the seasonal march of the constellations. I can guarantee that the more time you spend outside under the night sky, the more intimately you’ll understand the cycles of the universe. In time, the photos you take will help you reflect on your experiences, remember them more vividly, and create a deeper connection to the natural world.

I think you’ll agree that all that adds up to a pretty good “Why?”

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sensors have advanced at breakneck speed over the past few decades and even mobile phones are gaining remarkable low-light capabilities. Looking ahead, the promise of computational photography and virtual reality may offer new avenues for fresh images.

Use your list of dream photos to drive your purchasing decisions when it comes to new gear. For example, a fast wide-angle lens will allow you to capture more expansive compositions of the Milky Way or an auroral display while still including an interesting foreground landscape. A sky tracker or

equatorial mount enables the use of longer lenses and increased exposure times. A camera or lens upgrade can reignite your passion for astrophotography and help you approach it with a fresh perspective. In turn, this renewed interest may prompt you to consider new targets, seek out new locations, and push yourself to create better photos.

Learning for a Lifetime

Astrophotography is about much more than the gear or the results — it also provides an opportunity for lifelong learning and social interaction. There