

Photonic Cleaning Technologies presents Arnie Wittstein – An Astroimager's Journey



Garnet Star Nebula in Sii-Ha-Oiii color palette

It's December, 1997. I'm standing in twelve inches of snow on a concrete pad at the Los Angeles Astronomical Society's dark sky site in the mountains sixty miles north of the city. Despite wearing several layers of clothes, my frozen fingertips, where they protrude from the fingerless gloves, cannot feel the buttons of my telescope mount's slow motion control box. Neither can I feel my feet. I don't dare rub my arms and hands together, nor stamp my feet for warmth, for fear of jostling the telescope next to me. For two hours I stand there as my body temperature slowly decreases, my eye glued to the eyepiece of the off-axis guider, watching the guide star in the illuminated reticule. Every time it starts to drift I push one of those little buttons that I can no longer feel to bring it back to the center. For two hours, my classic Celestron C8 collects photons that hundreds of years ago left the Orion Nebula, funneling them down the tube

onto a frame of Kodachrome color film in my Minolta SLR camera at the other end. One single, two hour exposure. I hope everything goes well.

At the end of the two hours, I close the shutter. Now I can vigorously stomp, rub, jump up and down and engage in other behaviors to restore circulation to my limbs. I pack everything up, dry the snow off the tripod and make the sixty mile trip back home. The next day I take my precious roll of film with only a single frame exposed to the camera store and hand it over with strict instructions *not* to cut the negatives, as there will be no clear spaces between exposures to guide them. I'm not going to have anyone cut my hard earned work in half. A week later, I have my negative in hand. I take it home, scan it into my computer and using Photoshop 2.0 (yes, the original 2.0) I produce my very first astrophoto,



Jupiter



Lagoon Nebula (M8)



Trifid Nebula (M20)

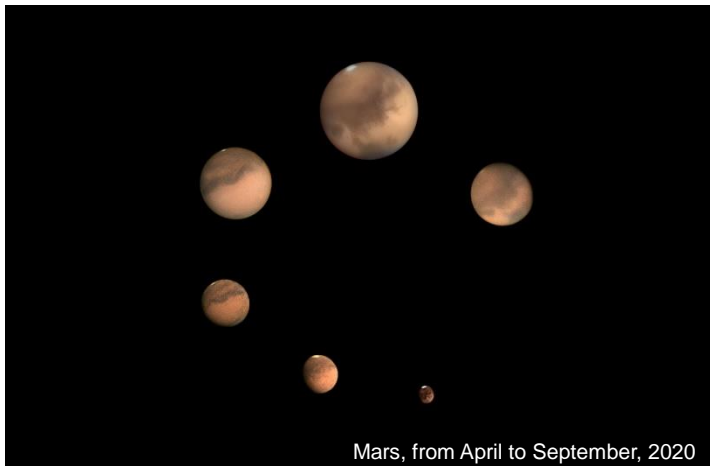
the Great Orion Nebula. Looking back on it, it was a fairly mediocre picture, but it was my first! I was proud of it, framed it, and hung it on the wall.

Fast forward to April, 2023. I'm sitting at my dining room table in northwest Oregon. It's pouring rain outside, something it does much of the year here. I set up my laptop and connect to my scope anyway. I choose an object and hit "GO". Seventeen hundred miles away, in southwest New Mexico, one of my scopes that a month earlier was installed at Astronomy Acres (www.astronomyacres.com) in Rodeo slews across the crystal-clear, dark desert sky. I watch it moving on the webcam feed. The scope stops at the Lagoon Nebula. The mini computer alongside the mount instructs the camera to take an image, determine exactly where the scope is pointing and adjust its position if it is not centered on the nebula. The autoguider kicks in, keeping the scope positioned exactly as it tracks all night long. The automatic focuser performs an initial focus and refocuses during the night if needed, something I couldn't even consider doing during the two hour exposure while my C8 was cooling down in the snow so many years ago. The mini computer then starts taking exposures, one after another after another, checking position and focus after each one. This continues all night long, while I blissfully sleep. If there are any minor problems, they can be corrected automatically. If something happens that requires my input, the imaging software sends me a very loud push notification on my phone. At the end of the night, the mini computer uploads all the files to my laptop and shuts everything down. When I get up the next morning, with it still raining, everything is waiting for me, and I have a new image by lunchtime.

My, how far I have come, and what an interesting journey it has been. I've imaged from the high desert of Oregon, the outskirts of Los Angeles, from atop Mount Wilson, to New Mexico and from a beach on the Pacific coast of southwest Mexico. I've been fortunate to have some great equipment along the way: my original C8 which is still a work horse instrument for me, 24mm, 50mm and 180mm camera lenses, all the way up to my C14 EdgeHD, which when doing planetary imaging, gives me a barlowed focal length of almost 8000mm!



Triangulum Galaxy (M33)



Mars, from April to September, 2020



Piccolomini crater

A couple of years ago I added a Coronado Hydrogen-alpha solar scope, as taking images of solar prominences is something I've wanted to do ever since I took my first picture of sunspots projected on a wall using a Kodak Instamatic camera. My Losmandy G11, first purchased in 2005, easily handles anything I throw on top of it, with superb guiding. My old film and CCD cameras have given way to both modified and unmodified Nikon DSLRs and CMOS cameras from ZWO and QHYCCD. And, finally, I have a remote set-up.

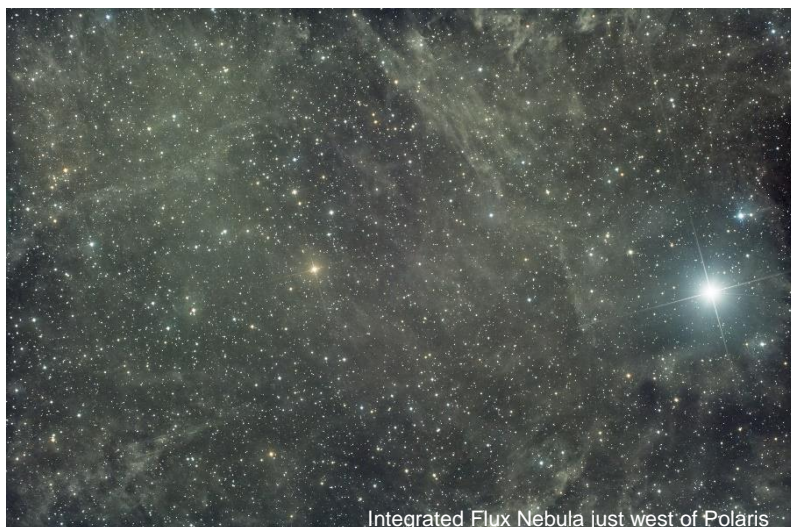
A remote imaging rig is something that always seemed to be for "other people" that published exquisite images in astronomy magazines. But after an entire year of not imaging due to cloudy weather for nine months and then wildfire smoke for the next three, I knew something finally had to be done, not including moving my family cross-country or selling off all my equipment! At the same time a friend of mine, who *did* move cross-country, told me about Astronomy Acres, where he just helped complete construction of its second roll-off roof observatory. I felt it was karma that my friend should have been there at the same time I was looking for alternatives, so I finally took the plunge. I packed up my SharpStar150/2.8HNT, one of the Losmandy mounts, a camera, rotator and a couple of cases of all the other bits and pieces of equipment, cables, power supplies, etc. and took a road trip to New Mexico. Of all the large and small technical problems to overcome in the process, one of immediate concern was what Oregon weather does to one's optics. The primary mirror of this scope had water spots, dust, pollen and stinkbug feces on its surface. They get into every nook and cranny of any equipment left outside – I even had to clean them out of the worm gear housing to correct a rather severe guiding problem! This mirror needed a major cleaning, as I would not have access to it once I left New Mexico. But the scope is also an extremely fast f/2.8 and collimation is critical. I really didn't want to remove the mirror from its cell to clean it with dish soap and water after all

the time I took nailing down perfect collimation. That's when I remembered reading about First Contact Polymer from Photonic Cleaning Technologies in Amateur Astrophotographer. After my order arrived I was able to remove the mirror and cell from the back of the scope together, apply the polymer and peel it off when it's dry. The mirror came out spotless! After setting up the scope in New Mexico, it only required 1/10 of a turn of a single collimation screw to achieve perfect collimation again. I have since used First Contact to clean the corrector plates on my SCT's. It is so nice getting such spotless optics without worrying about water or other cleaning solutions getting into the scope.

Finally, one must not forget the human side of this hobby. I can share images of some of the most remote and beautiful objects in the universe with my family, friends, clients and on the web. I have made new friends with whom I share a dark-sky site in central Oregon. Larry, the owner of Astronomy Acres, and I instantly hit it off during my trip there and we are now good friends as well. The sound of a child at an outreach program at a local elementary school asking "Wow, did you take that picture?" is exhilarating. Then, of course, there is the peaceful solitude out under the desert night sky, realizing that all those things whose images are hanging on the wall in the observatory are really out there. The equipment hums, clicks and occasionally beeps inside, while I watch the stars pass overhead.

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Are you a First Contact Polymer user and Astro Imager? Contact us at sales@photoniccleaning.com for the chance to be selected as a featured guest.



Integrated Flux Nebula just west of Polaris



An eruptive solar prominence in Hydrogen-alpha light



Wolf-Rayet 134