

2021 February Observations from Big Woodchuck Observatory

----- Original Message -----

Subject:[ORAS] A cold Feb night's observing

Date: Mon, 08 Feb 2021

hi all,

After a couple weeks of winter-wonderland cabin fever, Saturday evening's blue-skies easily tempted me to brave the cold outback for observing. (heavy winter clothing and a propane heater helps!) So that afternoon, I headed out to shovel the last bit of ice off the flip-roof of FrozenChuck Observatory, along with re-attaching the cameras that I've had up in the house. Went to take the tarp off of the outside telescope to find it frozen to the ground, LOL!

Once I was done re-attaching the cameras and guider to the 8" Celestron SCT optical tube on the Atlas mount, I recovered that scope with the tarp and headed into the observatory to get the 8" Meade SCT prepped. That scope was going to be my main focus for the evening as I wanted to piggyback on it my Kson 80mm f5.5 440mm ED Doublet refractor to test out an Orion Field-Flattener with my main imaging camera - ZWO ASI294MC. (I've had the Kson refractor for a few years, but have only used my old monochrome StellaCam-3 analog CCD video camera on it.

Was curious to see how a much larger color CMOS chip camera would work).

According to <https://www.skyatnightmagazine.com/astronomy-field-view-calculator/>

with that scope/camera combo I should get a moderately wide field of view:

Targets	Mode	Image	Options	Help
Telescope make... ▾	ZWO ▾	Results		
Telescope model... ▾	ASI294 ▾	FOV: 2.50° x 1.70°		
- Aperture: 80mm	- Pixel size: 4.63 μm	Resolution: 2.17"/pixel		
- Focal length: 440mm	- Image size: 4144 x 2822	Area: 4.25 sq°		
- Focal ratio: f/5.5	- Sensor size: 19.2 x 13.1mm	Focal length: 440mm		
- Barlow/Focal reducer: 1x	- Binning: 1x1	Focal ratio: f/5.5		

So around 7pm, I donned the heavy clothing and headed out.

Several of the gang were also out imaging - Ed and Denny, and we txted back-n-forth. I had to watch my step around the shed observatory as the snow that I had mushed down from walking around earlier that afternoon had re-frozen into icy patches. It was especially treacherous around the Atlas mount and I had to watch my step to keep from skating into the telescope. With the outside temp hovering in the low 20's, the inside of the observatory was in the upper-30's, but soon the propane heater made that more comfortable. Still, once I opened-up the observatory flip-roof with only a heavy curtain separating the now exposed telescope section from the rest of the shed interior, cold air was slowly winning the battle with the heater.

With Orion well placed, I decided that his belt would make for a good test of the field-flattener.

Here's the test result: (5 second exp, 6 subs stacked for 30 seconds. Unguided. IR filter, full ROI=4144x2822)



Here's a more fun image - M42 & Running Man –



(15 second exp, 60 subs stacked for 15 min, unguided, IR filter, ROI=4144x2822).

The test results are a mixed-bag. While the 'Orion brand' field-flattener did improve the overall view, if you zoom around the edges/corners of the image, there's 'eggy' stars to be seen. Having spent the past several weeks researching field-flatteners and focal reducers, not sure if I can find any other brand (that doesn't cost a small fortune) that would work any better. From what I've read, the general consensus of the 'net' is that you really need to buy one from the same brand as the scope that specifically matches that scope. (if they make one), Or buy one of the newer small refractors that have the field-flattener already integrated within it. I think I'll just stick with what I got and crop the image if need be.

If anyone is interested, here's a good resource on choosing a focal reducer:

<https://agenaastro.com/articles/guides/focusers/focal-reducers-guide.html>

With the testing finished, I closed the observatory roof and moved the camera outside to the other telescope and booted the Atlas mount up. Once my fingers thawed-out I planned on imaging more objects from the Sharpless catalog. But after a few slews, I discovered that the mount's GOTO was so far out that it was difficult to center even bright stars using the wide-field finder. I tried syncing the mount a few times but that didn't seem to help.

I figured that with all the temperature swings we've had over the past several weeks that the frozen ground has heaved under the tripod legs and thrown off the mount's alignment. With clouds now rolling in, and being cold, I decided to save fixing the alignment for a warmer night and headed indoors to warm up.

Larry