EAA observing – Sunday 12/08/2024 @ Big WoodChuck Observatory

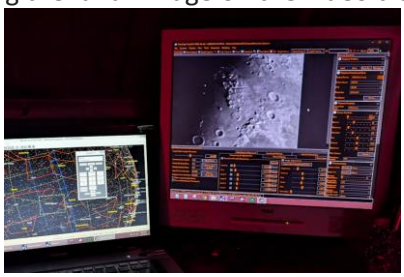
Hi all,

Once the righteous football smack-down the Steelers dealt to the Browns was over; I headed out to my backyard observatory to prep for the evening. The sky was a mostly clear blue, but wasn't sure how long that was going to last as a few hazy streaks were visible and the weather satellite showed clouds moving down from the NW.
At dusk, I donned a heavier jacket and under a bright First Quarter Moon, I walked back down to the observatory. With both my outdoor travel scope and the inside observatory scope readied, it was just a matter of flipping a couple of power switches, connecting to the telescopes/cameras and I was observing.


After getting the travel scope (C8" SCT optical tube @ f6.3 on an Atlas GEM) ASI294MC camera focused, I slewed the telescope northwards to Cassiopeia and deep-sky object NGC7635 – "the Bubble Nebula" and setup a 2 minute exposure and began Sharpcap livestacking.

I then slewed the observatory scope (Meade LX200GPS 8" SCT @ f10 on a fork-wedge mount, and StellaCam-3 Analog B&W video camera & IR filter) to the Moon. I wanted to run a comparison between the old analog SC3 camera and my ZWO ASI290MC CMOS planetary camera. (this is the camera that I've been using with a Canon 5mm lens piggybacked on the travel scope for ultra-widefield Milky-Way observations. I pulled the ZWO camera to use on the Meade telescope at prime-focus for the winter). The comparison tool would be Sharpcap's planetary livestacking feature which I'm still learning.

While I didn't expect the old analog videocam to match the newer digital camera, it was still fun going back to the earlier days of videoastronomy, with watching the lunar image on the video display monitors while capturing.

Here's a couple of SC3 test planetary stacks: Apennine Mountains and the Crater trio of Ptolemaeus, Alphonsus, and Arzachel: Resolution=640x480, ~10ms exposure, gain=25, gamma=0, 500 frames stacked


While the planetary livestacked images were interesting to view in real-time, both on the analog monitors with tweaking their brightness/contrast adjustment knobs and on the laptop screen using the Sharpcap tool filters, the low resolution technology of the 16 year-old analog camera just wasn't able to bring out the finer surface detail that I wanted to see.

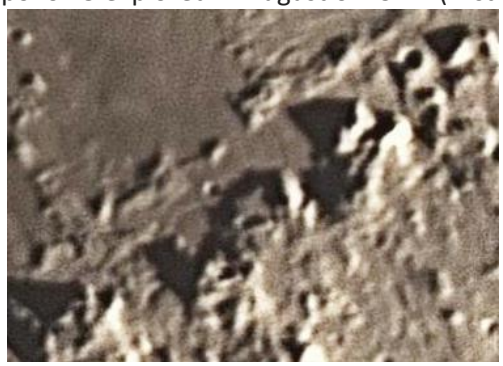
At this point, with a quick glance at the AllSky camera, I noticed that the haze was really degrading the sky transparency, impacting my deep dive with the other telescope on the Bubble Nebula.
So after letting the travel scope & ASI294MC complete a one hour livestacked, I saved the observation:

Even using the narrowband filter, the combined punches of bright Moon, lite hazy-sky, newer LED neighborhood streetlights, and observing from my xmas-light infested light-polluted backyard, were too much for my kit.

(8" f6.3 SCT optical tube on Atlas Gem, ZWO ASI294MC Pro camera & L-eNhance narrowband filter, 120 second subs livestacked in Sharpcap for 1 hour).

So I decided to shutdown the deep-sky scope for the night and stick with planetary observing using the Meade 8". The next step in comparing the analog vs. CMOS cameras was to switch the SC3 camera with the ZWO ASI290MC, and do a quick refocus on a nearby star. I then slewed the scope back to the Moon and proceeded with planetary livestacking once again on the Apennine Mountains and the three big craters. I had to be quick as the Moon was now settling towards the western observatory wall. Here's the results: the Apennine Mountains.

This is the fine detail that I wanted! That I could explore using my Rukl Moon Atlas.
The tall peaks of the Apennine Mountains glowing in bright sunlight while casting long jagged dark shadows behind them. Uneven surface gradients in the Mare Serenitatis to the east, with small craters, hills, and rilles visible in the highland region to the west, including the rille and small crater near Mt Hadley that the crew of Apollo 15 explored in August of 1971. (first use of a lunar rover).



The large 51 mile diameter crater Archimedes with its western rim illuminated by the rising Sun, while the eastern rim casts long shadows across the relatively smooth crater floor. And a little to the NE, the smaller 34 mile diameter crater Aristillus, with its multiple central peaks and rim surrounded by rough ejecta debris.

Then, in the next image, the three craters of Ptolemaeus, Alphonsus, and Arzachel:

Within the large 95 mile diameter crater of Ptolemaeus, the smooth floor of the walled plain visible using the analog SC3 camera is now displays a number of pits and small ghost craters using the ASI290MC.
Particular in note is the 10 mile diameter ghost crater Ptolemaeus-B whose flooded rim is just touching the younger crater of Ammonius. There's also the un-named string of craterlets running from the eastern rim of Ptolemaeus to crater Muller.

The middle crater of the trio, Alphonsus, is about 70 miles in diameter with a tall central peak just under 1 mile. The last and smallest of the craters is Arzachel, coming in at 60 miles, displays a terraced rim and a large central mountain 1.5 mile high with a 6 mile diameter crater close by. (see main photo above).
I wasn't able to continue my lunar prospecting as soon after my initial inspection of Ptolemaeus, the Moon slid behind the observatory wall. I'll have to come back to this area around First Quarter in January.

Both the Apennine Mts and the three craters were EAA observed using my: Meade 8" SCT LX200GPS @f10 on a fork-wedge pier mount and a ZWO ASI290MC planetary camera (1936x1096) and IR filter. Captured with Sharpcap Planet Livestack tool. Unguided. Resolution=1936x1096, 10ms exposure, gain=0, 500 frames stacked.

I then moved on to the 'King World', the planet Jupiter. After adjusting the exposure to 75ms, I initiated Sharpcap planetary livestack and after the first few frames had a decent image of Jupiter & its bands, along with the moons Io to the left of Jupiter's disk and Ganymede to the right. The thickening haze did make it a bit difficult to get a good 500 frame stack that I wanted. Here's the best one at 368 frames livestacked:

I also attempted to use the Sharpcap time-lapse feature, but between the clouds and not guiding, it's a bit jerky. (which was a shame, as I could have caught Io transiting Jupiter's disk).
Here's the YouTube link: https://youtu.be/MWVcjwOlM1Q?si=nveHIEWBisUtTDtw

With that, the sky had gone overcast, so I called it a night and closed up the observatory.
While not a productive deep-sky session, the lunar/planetary time was fun! Looking forward to getting out later this month, hopefully, for more Lunar observing.
Larry