2021 April Observations from Big Woodchuck Observatory

------- Original Message --------
Subject:[ORAS] Time for the Arps
Date: Sat, 10 Apr 2021

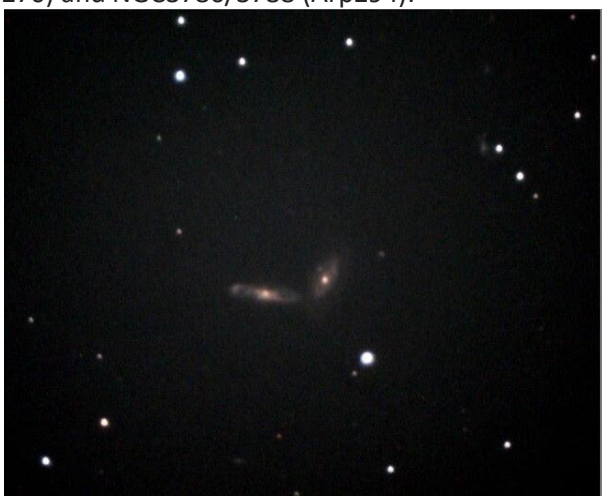
hi all,
Got out last Sunday evening, 4/4, for a little observing. With the change in seasons, most of the HII Sharpless nebula that I've been observing have left the scene, so as Spring is known for Galaxies, it was time for galaxy hunting. After a nearly 2.5 year hiatus, I decided to pick-up where I left off with my Arp Peculiar galaxy observing project. (learning new cameras and software will put you behind! :-))

Tonight I was going to use the L-Pro filter for the entire evening, as it works better than the L-eNhance with 'starry' objects such as galaxies. As I was going after small faint galaxies, I would also be imaging at a reduced camera ROI of 2072x1410. This has several benefits, makes the object larger on the monitor screen, but more importantly it helps reduce the need for using flats. (which I find are somewhat of a mystery of the dark arts that I have yet to master, lol)

While waiting for the Lion to get a little higher over my observatory roof-line, I spent some time visiting the Bear. Wanted to take another crack at the Messier pair of M81 & M82. (M82 is also known as Arp337). While in the area, I dropped in on the 'Owl Nebula', M97 as I wanted to see how well the L-Pro filter would work on planetaries. Here's the results of all three:

(8" SCT optical tube @f6.3 on the Atlas GEM, with the ASI294MC camera, 120 second exposure for the galaxies for a total of 30 minutes, and 60 second exposure for the planetary, for a total 15 minutes)

I then headed over to the Leo/Leo Minor region of the sky to hunt additional NGC/Arp galaxies.
These included the interacting pairs of NGC3395/3396 (Arp270) and NGC3786/3788 (Arp294):

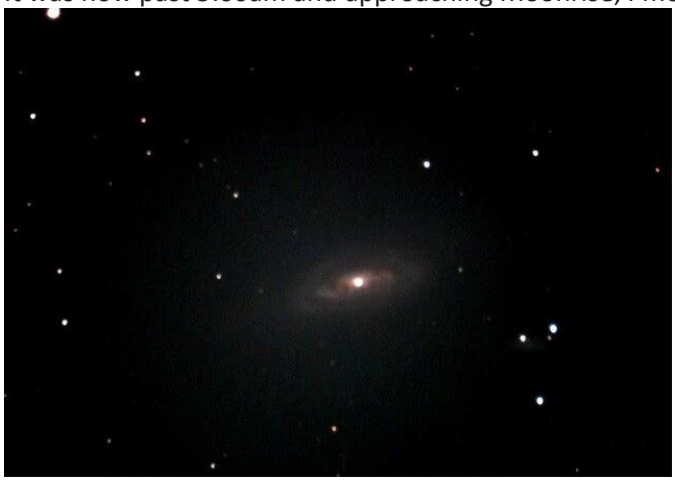


<same telescope & camera info as above, 120 second exposure for 30 minutes)

I also observed spindle galaxy - NGC3432 (Arp206) showing tidal effects off of either end of the spiral, and over to the Leo Triplet for a deeper image of NGC3628 (Arp317):

(same telescope, camera, and exposure as above)

It was now past 3:00am and approaching Moonrise, I moved over to Virgo for one last object of the night, galaxy M90:



After finishing the image, I shutdown the scope and cameras, threw the cover over them, and called it a night.
That brings me up to 120 Arps captured, out of 338. Time to get busy!
Larry

-------- Original Message --------
Subject:[ORAS] A short April Night
Date: Wed, 14 Apr 2021

hi all,

With yesterday afternoon's sunny skies, it looked like we were going to get a good night of observing.
At sunset, the daytime cumulus clouds evaporated into the sky, leaving it just a bit hazy in transparency.
Still, from the forecast, the evening would improve, so I headed outback to the observatory for a few minutes to uncover the telescope and power-up the equipment. Once the sky had become dark enough, I grabbed my bag of KitKats, (the official amateur astronomers snack, ;-)), and headed back out to observe. By now, most of the earlier haze has dispersed, but there was a small bank of persistent clouds to my south that was catching the local light pollution and brightening that section of the sky.


So I decided to head North to Ursa Major and hunt Arp Peculiar galaxies nested around the bowel of the big Dipper.
But first, I stopped by a couple of bright Messier galaxies: M108 & M109.


(8" SCT optical tube @f6.3 on the Atlas GEM, with the ASI294MC camera & L-Pro filter, ROI=2072x1410 then cropped, 120 second exposure for a total of 30 minutes)

I then started off with Arp296 & 299 (PGC35345 & NGC3690/IC694), both in the same FOV. (if you ever want to hunt Arp galaxies, a great book to have is the "Arp Atlas of Peculiar Galaxies - a Chronicle and Observers Guide" by Jeff Kanipe and Dennis Webb). After capturing an image and noting from the book what features I could detect, I then moved on to Arp269, (NGC4485 & 4490, known as the 'Cocoon Galaxy;) just over the border in Canes Venatici.
NGC4490 is a large bright barred spiral with interesting knots!

Here's the images from all:

(Arp296 & 299, and Arp269, same telescope & camera info as above)

During my observing of Arp269, a number of light hazy bands began to build to my south and began pushing northward. Shortly after midnight, as I was positioning the telescope & main camera for the next object, I noticed that the view in the wide-field Canon piggybacked lens started going soft. Looking over to the allsky camera monitor, I realized that the clouds that had been hanging to the south had suddenly boiled over to the north. I was clouded-out!!

From checking the weather satellite image, a huge blob of clouds had developed to the southwest and rolled over our region. There was no end in sight. (the forecast still showed clear skies, heh!)
So I shutdown the equipment and called it a night.
Larry

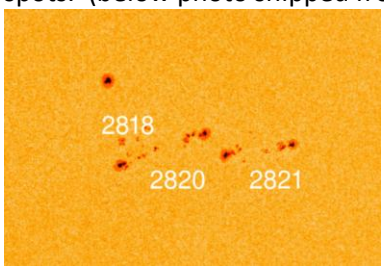
-------- Original Message --------
Subject:[ORAS] A Solar Day
Date: Wed, 28 Apr 2021

hi all,
With the bright sunshine these last few days and solar activity showing signs-of-life over the past week, I decided on Tuesday (4/27/2021) to head out to the backyard observatory and do a little solar observing using my old analog vidcams and solar filters. After spending a half-hour trouble-shooting a few loose cables and tweaking the camera & monitor settings, I soon was able to sit back in my chair and video-observe the Sun.

The solar equipment consists of a Coronado 40mm 'PST Ha' & 'PST CaK' solar telescopes piggybacked on the observatory's pier mounted Meade 8" LX200GPS SCT with a Daystar .65A T-Scanner H-alpha filter. The video-cameras for the two PST's is a pair of old Sony Super HAD 1/3" CCD B&W CCTV cameras with eyepiece adapters, and an old Astrovid-2000 1/2" CCD B&W vidcam. Each camera feeds its own small 9" tube monitor and all three monitors are connected via a video-switcher to a larger 15" tube monitor, which feeds a video-capture card in the old Win XP desktop PC. This setup allows me to observe and monitor multiple-wavelengths of the Suns activity in real-time. When I see something interesting on one of the monitors, I can quickly do a snapshot or capture a short avi clip for later processing using Registax. Here's a pic of the telescope & cameras and the video-monitors.


(the 80mm refractor that's also piggybacked on the SCT has a 1000-Oaks white-light glass filter that I use to visually sketch full disk sunspot locations).

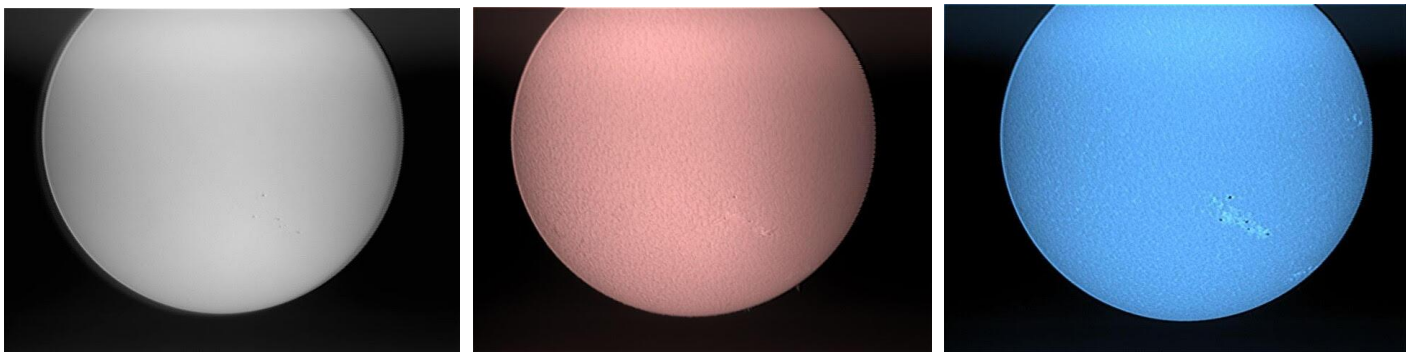
From consulting https://www.spaceweather.com/ there were two class-D active regions and a class-J spot all closely clustered together in the SW region of the disk. (AR2818, AR2820 & AR2821). Visually thru the 80mm and using the vidcam on the PST Ha detuned out of band to WL, none of the sunspot groups displayed much in the way of interesting structure in white-light other than 2820 & 2821 showing bi-polarity and penumbra on both the leading and trailing spots. (below photo snipped from Spaceweather)



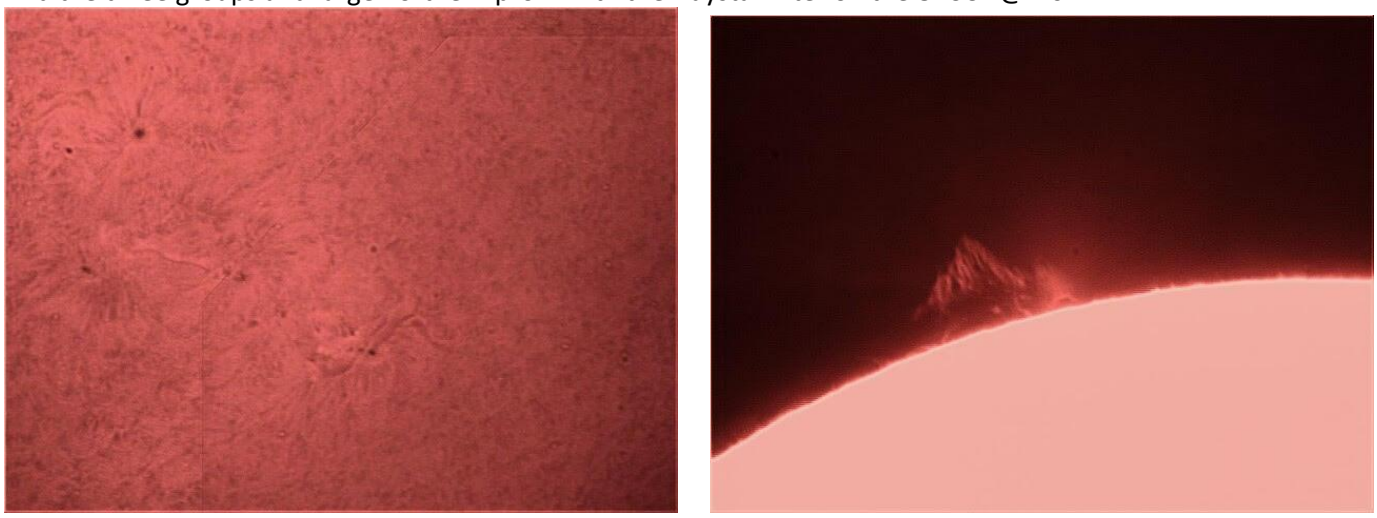
One way to think of Sunspots is that they are like giant bar magnets, with one spot being the north and the other being the south pole of the magnet. The Sun goes thru a 11 year cycle of high & low magnetic activity, which impacts the number and intensity of sunspots that are visible. The last peak, or Solar Max, of Cycle 24 was in April of 2014.

We're currently coming off the last Solar Minimum, which occurred in 2019. Cycle 25 has finally started generating sunspots, so the number visible on a given day is starting to increase. The next Solar Max should be in midsummer of 2025. (bi-polarity means that the spots are aligned in a general East-West row, like a bar magnetic).

Both for the video-monitors of both the PST and Daystar filters when tuned on-band, and for the Cak PST, the video displays were more interesting. The Ha's show the mottled chromosphere along with filaments and spicules aligning along magnetic field-lines. There were also several nice limb prominences, with what looked like a potential large eruptive prom along the Northern limb. (if I didn't need to run a couple of errands, I'd kept watch on that prom all afternoon). The PST Cak telescope showed bright areas of plage intertwined among the spots and further away along the Western rim of the disk.
Here's three views of the Sun with the different PST/vidcam views. (PST detuned to WL, Ha, Cak)



And the three groups and large northern prom with the Daystar filter on the 8" SCT @f10:



These were all 15 second avi clips with several hundred subframes stacked and post-processed using Registax. Then resized and a touch of color added.

So not a bad afternoon of old-school B&W solar videoastronomy!
Now, if only I hadn't been spoiled by my newer much-higher high-resolution color ZWO cameras,,,, ;-)

Larry