

Steve Yates
Fort Worth, Texas
2024

Astronomy Log

Visual Observation Notes

Time: CST/CDT (UTC-6/-5)

Telescopes: Astro-Tech **AT102ED**, 102 x 714 mm, f/7, ED Refractor
Astro-Tech **AT80ED**, 80 x 560 mm, f/7, ED Refractor
Bresser Comet Addition, **AR102s**, 102 x 459 mm, f/4.5, Achromatic Refractor,
Aperture Mask 60 mm (f/7.65) to meet the Sidgwick Standard (CA)
Aperture Mask 48 mm (f/10) to meet the Conrad's Standard (CA)

Eye Pieces: Astro-Tech ED Paradigm, 5 mm, 12 mm, and 25 mm
Stellavue 4, 8, and 15 mm EUW Ultra Wide Angle 82 degrees
Celestron 8-24 mm Zoom
Plössls, 6 mm, 8 mm, 13 mm, 17 mm, 20 mm, 25 mm, and 32 mm

Barlow: Celestron 2X
SvBONY SV137 3X

Mounts: Explore Scientific Twilight I, Manual Alt/Az
Bresser, Manual Alt/Az (*Same as Explore Scientific Twilight Nano*)

2024-01-06

21:15-22:15

The night was unexpectedly clear and calm at 43° F but humidity was 80% so I debated on taking my telescope out. So, I brought my little eye enhancers, my Omegon 2.1 x 42 mm binoculars.

In my Bortle 9 skies I could easily see the constellations Orion and Taurus overhead. The Hyades star cluster was the most beautiful at this low power. I could see hundreds of stars looking like tiny diamonds sprinkled on a dark blue velvet.

I thought I could see Uranus in between M 45 and Jupiter. It turned out to be the star Botein (Delta Arietis).

Next, I brought out my Bresser 7 x 50 binoculars out. With these I found Uranus by star hopping.

Hyades looked even better and still just fit in the field of view.

These Bresser binoculars are really good optically but the eye relief is too much for my eyes and it is hard to prevent the “kidney bean” blackout without keeping my eyes well away from the eyepieces, letting surrounding light sources mess up the view.

I then brought out my 30+ year old Minolta 10 x 50 binoculars. The real field of view seemed to about the same as the Bresser’s, but with higher power the apparent field of view was larger as was the objects being viewed. Hyades and M 45 were beautiful in the pair, but objects were not as bright as in the Bresser. For some reason, over time these binoculars have lost the ability to stay in adjustment. I would adjust at the center of the field for each eye only to be out of focus the next time I viewed anything.

One of my neighbors appears to have installed a new flood light that lit my house up like daylight, though it didn’t directly illuminate my observation spot. I decided to quit for the night.

2024-01-09

20:15-21:15

After a very windy couple of days the skies were exceptionally clear and calm. The temperature was 41° F and dropping. I brought my AT80ED out for some views.

I started off with Jupiter and my el cheapo Astromania 25 mm (22.4x) Plössl eyepiece. I could see the four Galilean Moons and the star HD 13739 imposing as one. Jupiter was too bright to see any detail. I then put in my Astro-Tech Paradigm 25 mm EF eyepiece for comparison. Both had quality views though the ED had a wider field of view and I could situate my eye easier.

I hopped to The Pleiades, M 45, Hyades, and then to Zeta Tauri on the tip of Taurus' horn. Right next to it shining brightly was the minor planet, Vesta. It was very easy to find. I put in my 13 mm (43x) Plössl and got very sharp views. I could tell that Vesta was ever so slightly more orange as compared to the surrounding stars.

With the 25 mm Plössl I star hopped over to the very bright star Capella. I did not see any erroneous reflections in the eyepiece and the view was superb all the way to the edge of the field.

I scanned the thick star fields in the region and came up the open cluster M 35. I switched to my 13 mm Plössl for a spectacular view. I could see hundreds of stars.

By this time it was 39° and I had to go to work in the morning so I quit.

2024-01-18

21:40-22:25

It was 44°F just hours before an Arctic blast so I thought I'd get in some observations with my AT80ED. The sky was exceptionally clear though the 60% waxing gibbous Moon was bright as were my neighbor's lights. Seeing was about 6/10, a bit weebly wobbly.



I popped in my 8 mm, 82° (70x) eyepiece in to look at the Moon. The region in around the Sea of Showers was putting on the show tonight. The Apennine Mts were spectacular as was Mt. Pico. Just east of Mt. Pico and well into the darkness region were two bright “eyes” staring over the terminator. They may have been the Teneriffe Mts at sunrise.

Jupiter was just west of the Moon and all of the Galilean Moons were visible. I could not make out the details of Jupiter as I normally do, even when changing to my 4 mm (140x) eyepiece. It was still a beautiful view until it moved into my trees.

Next, I turned east to catch the bright double star Caster as it was approaching my zenith. The pair look great as usual in both my 8 mm and 4 mm eyepieces.

I scanned around the skies a bit and came upon an interesting orange star that I believe to be Alsciaukat (31 Lyncis).

I was getting tired after working a 10 hour day so I packed up happy that I got some views in before the weather turned for the worse.

2024-01-27

18:30-18:55

One of my sons got my Astro-Tech 8 mm Paradigm ED eyepiece to go with the rest of my set. Tonight was the first clear night in a while so I thought I'd do some comparisons. The temperature was 47° F and very slight breeze out of the north. I brought my AT80ED out.

I did my test on Jupiter. It was high in the sky and there were two Galilean moons on each side of it. I first used the new Astro-Tech Paradigm ED 8 mm eyepiece for a power of 70x. Next, I tried my Stellarvue 8 mm, 82° FMC eyepiece. And for a last comparison I used my Celestron 8 mm, 52° Plössl.

The Stellarvue and the Plössl had identical sharpness, light transmission, and very little to no chromatic aberration. Of course there were the large apparent field of view and greater eye relief of the Stellarvue.

The Astro-Tech showed a tiny bit more CA as I've noticed before with my other focal lengths of the same model. There is another defect that only shows up on these Paradigms and that is an eyeball reflection when viewing bright objects like Jupiter. It is nothing bad, just a fleeting ghost that wanders as my eye does. I don't notice it on other eyepiece makes so I suspect it has something to do with the coatings on the lens surface closest to my eye. The beauty of these Paradigms is the excellent eye relief. It is very easy to observe with these eyepieces and my new 8 mm is no exception. Also, when taking photos with my iPhone, aligning for a clean shot is much easier with the Paradigms.

I went inside to watch a movie with my family.

22:00-23:20

I came back out after the movie. It was now 41° F and a little breezy.

I put in my 15 mm (37x), 82° eyepiece and started at Aldebaran. I scanned around the pretty Hyades star cluster and scanned south until I came across a distinctly red star. It turned out to be

Omicron¹ Orionis (4 Orionis). I knew that The Ruby Star (119 Tauri) was in the vicinity so I searched and found it. It did not seem as red as Omicron¹ Orionis.

Also in the vicinity was my favorite wandering star, the asteroid 4 Vesta. It was easy to see at 37x. The predicted magnitude was 7.36. My Stellarium Mobile app indicated that another asteroid, Astraea was in Orion. I tried to follow the star pattern in Orion's arm to Astraea but I just couldn't get a pattern recognition. However, I did come across an open cluster that turned out to be NGC 2169.

I slewed down to the south a bit to check the always beautiful M 42, the Orion Nebula. I could see a lot of detail in the nebula tonight and I slipped my 4 mm (140x) eyepiece in to see if I could see the E and F components of the Trapezium Cluster. The breeze was just a little too strong for my flimsy tripod/Mount so I could not. The regular four were quite sharp.

I went a little north to my favorite multiple star system, Sigma Orionis. I could see the usual four visible stars with component C being a very faint star opposite the others.

The temperature was now 38° and almost cold enough to make me numb to the cold but not quite. I took a gander at Betelgeuse before going to bed just for grins. I zoomed in with my 4 mm eyepieces to see the Airy disk and diffraction rings. When I focused inwards it looked like the intro on the old Outer Limits show.

2023-01-28

18:25 - 18:55

It was another perfect observing night. It about 56°, clear, calm, and quiet. I brought both my AT80ED and Bresser AR102s out. I mounted the Bresser first why there still some twilight. As soon as I did I heard a large number of coyotes start howling all at once. It's not super unusual, but given that I live in the city it still surprises me.

As it was still getting dark, I played around with different eyepieces, with and without a 60 mm aperture mask. As I've known from when this was my primary telescope, it is an excellent 102 mm low power sweeper. With the aperture mask, it becomes a 60 mm planetary scope. With the 25 mm (18x), 60° eyepiece, the dense star fields in Perseus at my zenith were coming to life as it got darker. But I had to break for supper.

19:45 - 21:30

I came back outside and started at Algol with the 25 mm eyepiece. I moved just below Algol to the north and came across the Spiral Cluster, NGC 1039. I switched to my 15 mm (30x), 82° eyepiece and played with the aperture mask. The cluster looked better without the mask and I also preferred the view at 18x. An interesting side note, I was seeing numerous satellites cross my field of view but while at 30x looking at the Spiral Cluster, a dark gray object crossed my field of view slowly in about 3 seconds that had an observable size to it. I couldn't make out the shape because it caught me by surprise.

After wandered through the star fields, I turned to M 45, the Pleiades with my 25 mm eyepiece. It looked great at 18x and a 102 mm aperture.

I swapped telescopes out and mounted the AT80ED. I observed the Pleiades at 25 mm (now 22x) and the field of view was slightly smaller but the stars were more crisp. It's hard to beat the ED scope.

I found Uranus was in between the Pleiades and Jupiter. I increased the power until I got to 140x. Uranus was a pale blue and had a discernible disk to it. To confirm it wasn't just an Airy disk, I compared a nearby star of the same magnitude and it definitely was more of a point source than Uranus. I could not discern any moons.

I scanned around the skies at various targets and I had to quit to go to bed for work in the morning.

2024-02-03

18:55 - 19:25

Had a nice evening so I came out to observe. It was calm, clear, and 59° F. I brought my usual AT80ED telescope out.

My first target was Jupiter with my 15 mm (37x), 82° eyepiece. I next switched through my 8 mm (70x) and 4 mm (140x) eyepieces, No. 58 Green filter, and ND 0.9 Moon filter. I was able to see the usual SEB and NEBs, and bands towards the northern pole. I could detect a festoon in the middle of the NEB. Though the image was very stable, my visual acuity seem to go in and out. I have seen Jupiter better but then again we are moving away from it.

I stopped to go inside for supper and a movie.

21:25 - 22:20

I came back out and it was 54° and Aldebaran was where Jupiter was earlier. I locked on to the red giant with my 15 mm eyepiece and then down to 4 mm. Seeing was at least 9/10 but I could see the orange Airy disk and several diffraction rings. Any fluctuations seemed to be from crud in my old eyes. I then slide down to the Hyades star cluster with the 15 mm eyepiece. I checked out a couple of double stars in the system but of course I could not detect the companions.

I starting slowly scanning the skies and came upon a very slow moving satellite in a descending orbit. I moved slowly across my field of view and was very dim except it would flash about every ten seconds.

Sirius was appearing in an opening between tree branches. I turned to the beautiful blue white star and it was very stable and bright. I switched to 4 mm and the brightness and diffraction rings were amazingly stable. Seeing must have been close to 10/10! I tried various ways to see the companion “Pup” star. I tried occulting with the edge of field and tiny tree branches. I tried with the addition of my 2x Barlow. I tried with the NF 0.9 Moon filter, but all were to no avail. And then Sirius went out and I looked up and clouds had moved in. It was time to call it a night.

2024-02-05

19:30 - 20:22

I had another clear night that was calm and a cool 54°. This time I brought out my larger AT102ED telescope out.

I put in my 25 mm (28.5x) eyepiece and found Jupiter. I subsequently increased the power until I was 178x with my 4 mm eyepiece.

I could see three of the Galilean moons with Callisto hugging the southern pole. I think the view was best at 89x with my 8 mm eyepiece.

I swapped out telescopes for my AT80ED while still observing Jupiter. Of course this telescope doesn't have as long of a focal length or power, I truly feel that it has better optics. Even with the 4 mm (140x) eyepiece, there was less CA and the stars were sharper with smaller telescope. I may have to try again with an aperture mask in the larger scope and then see how they compare.

Next, I turned to the orange star Hamal (Alpha Arietis) in Aries at 140x. I could see a well defined Airy disk and broken diffraction rings. Seeing was not as stable as my previous session. I swapped telescopes again to see how the big one did.

Again looking at Hamal, no diffraction rings were evident at 8 mm (89x). With the 4 mm (178x) the Airy disk and diffraction rings were visible but the rings were ill defined and more CA was evident.

I installed an 86 mm mask but the diffraction pattern was never as clear as on the AT80ED and CA was still evident. I went to a 5 mm (143x) eyepiece for a more direct comparison but the results were the same. At high powers, the AT102ED seemed to have a tiny bit of red and blue "flares" that prevented a perfect image.

To be fair, neither telescope was given much time to acclimate to the temperature outside that 53° at this point. It makes sense that the smaller telescope would not need as long of a time to warm up. However, I recall similar results in past comparisons.

I quit for the night to watch a show before bedtime.