

Observing Report for August 8-9, 2019, Backyard, Carranza & Swede Run

by Joe Stieber

August 8, 2019, Evening, Backyard

I received my new spotting scope yesterday, August 7, something of an indulgent birthday present to myself. It's a Kowa model TSN-883, which has an 88 mm, fluorite triplet objective. Like most spotting scopes, the focal length and f/ratio are not explicitly stated, but by some educated guessing from the eyepiece designation and magnification, I think it's effectively f/7.5 with a 660 mm focal length (update: an e-mail reply from Kowa customer service says it's 500 mm focal length, f/5.68... glad I asked).

I also bought the Kowa TE-11WZ wide-angle zoom eyepiece, providing a 25 to 60x range, and a Baader Planetarium adapter to use standard 1.25-inch astronomical eyepieces in the scope (directly, in place of the OEM eyepiece). I'm also considering getting the TSN-EX16 1.6x eyepiece extender (a Barlow really), but I decided to wait and see how the scope performs first. Finally, I bought the OEM Cordura carrying case and the recommended 95 mm protective filter as the fluorite element is in the front (but I bought a Nikon "neutral color" filter, which was half the price of the OEM unit).

The whole package was a tad expensive, but my current 85 mm spotting scope, while it has a nice form factor and optically, is probably fine for terrestrial observing, shows some deficiencies on astronomical targets. For the sum I spent, I could have bought a conventional 100 mm apo astronomical telescope, but it would not have provided the ease of transport and quick setup of the spotting scope, so I'll be more likely to actually use this scope frequently.

With the OEM eyepiece in place, the new Kowa weighs in at 70.2 oz, just 1.4 oz more than the old Vortex scope at 68.8 oz, so there was no problem swapping the new one onto the existing Acratec Nomad ball-head mount (on a carbon fiber Induro tripod) which has a "gimbal position" (a side slot which allows a smooth altitude movement). Coupled with the mount's standard smooth azimuth movement, it's like having the Kowa 88 mm on a Dob mount. I don't even need or use a finder.

One other thing is the focus control, which has dual finger wheels for coarse and fine focus, a vast improvement over the focusing collar that encompasses the entire circumference at the middle of the Vortex's tube. The tube collar seems to be a trend among several spotting scope manufacturers, but I think it's difficult to achieve fine astronomical focus and it tends to be bumped out of focus.

The target of first light would be Jupiter's satellite Europa that would be occulted by the Jovian disc about 9:50 pm EDT on August 8. I stepped out onto the back patio of my Maple Shade, NJ, home about 9 pm, and the scope was set up and ready to go in a minute. Despite no time for thermal stabilization, and sub-par seeing, Jupiter looked pretty good. With the zoom set to 60x, considerable detail was apparent, even though the perimeter of the disc was rippling from the mediocre seeing. The Great Red Spot was not available, but the North and South Equatorial Belts were well defined, and lesser, subtle horizontal markings and some shading were visible. The four Galilean satellites were visible (not a challenge), Io well to the east, Ganymede well to the west, while Callisto and Europa were more-or-less in a vertical line near the western limb. Callisto was above and moving away from Jupiter, Europa was below and moving towards Jupiter (and the expected occultation).

The sky was mostly clear, but there were a few scattered clouds, and some thicker stuff behind me in the northwest. I was watching Jupiter periodically as Europa crept nearer the disc. I also swung 12° west for as look at the 64% illuminated moon. Again, considerable crisp detail was evident (with virtually no false color at the bright limb). It was too late in phase to see the "Lunar X" but the craters Messier A & B were evident as was their "comet tail." I had planned to take another look with one of the higher-power astronomical eyepieces, but by time I got to it, a cloud mass moved over the Moon, and not long after, over Jupiter.

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However, I was able to see Jupiter with several of my Explore Scientific 1.25-inch 82° eyepieces. The shortest focal length eyepiece is 4.7 mm providing 140x. The view wasn't bad, but the seeing didn't support it. The 6.7 mm eyepiece, 99x, did provide a very satisfactory view of Jupiter and the satellites. I saw Europa very close to the limb, but at 9:35 pm, the cloud mass moved over Jupiter and blocked the moment of disappearance at 9:40 pm. Note that the stated magnifications of the Explore Scientific eyepieces are dependent on the correctness of my focal length assumptions. I need to contact Kowa and see if I can get an actual scope focal length value from them for confirmation.

Before the clouds moved in, I took a quick look at Saturn with the Kowa zoom eyepiece up to 60x. A nice image, but I couldn't clearly make out the Cassini Division. However, it was just above my neighbors' roof and the seeing was not good at all. There was probably still some daytime heat rising from the roof.

In any case, the Kowa 88 mm Apo Spotting Scope passed its initial viewing test with flying colors.

August 9, 2019, Morning, Carranza

I had hoped for clear skies after midnight as I wanted to head to Carranza Field in Wharton State Forest, NJ, to try the 88 mm Kowa on several solar system targets. They are the asteroid (4) Vesta in Aries, the comet C/2017 T2 (PANSTARRS) in Taurus, the planets Uranus in Aries and Neptune in Aquarius, plus the Pleiades and Hyades star clusters, both in Taurus. Finally, I wanted to spot the planet Mercury in Cancer before sunrise, but I hadn't decided whether to remain at Carranza for that or catch it at Swede Run on the way home.

After completing domestic chores, I put the Kowa 88 mm scope, the tripod with attached mount, my Swarovski 15x56 binoculars, my iPad with SkySafari 6, and some paper printouts of the targets in the car and pulled out of the driveway at 2:39 am EDT. At the time, it was humid and the sky was largely filled with not-too-thick cirrus clouds. I kept going anyway, hoping the clouds would thin out on the way, or if not, I could turn back.

I just kept going and arrived at Carranza at 3:28 am. There were still high cirrus clouds, but coverage wasn't as complete as it was at home. It was generally clearer to the east where my primary targets were located, in Taurus and Aries.

Comet C/2017 T2 (PANSTARRS) was between the horns of Taurus, roughly midway between the Hyades and the horn tips. Beta and Zeta Tauri. I scanned with the 15x56s and found my reference stars, but did not see any haze from this comet, which SkyTools described as magnitude 8.5. I then found the field stars in the 88 mm scope at 25x, and then specific stars at the comet position at 60x. At low power, it seemed a bit hazy there, but more like a star cluster than a comet's coma. At higher power, there was a modest sprinkling of faint stars there. Negative for the comet at 3:40 am.

I then looked for magnitude 7.9 Vesta. It was about 2° northwest of a pair of stars in western Taurus (magnitude 3.8 Xi Tauri and magnitude 3.6 Omicron Tauri). A line from these two stars near the western border of Taurus extended to Vesta in the southeastern corner of Aries crossed the northeastern corner of Cetus along the short path.

One problem I found was that SkySafari showed Vesta about 12 arc minutes west of the position shown by SkyTools. Regardless, the reference stars were quickly found in the 88 mm scope at 25x and at 3:45 am, Vesta was confirmed at the SkyTools position. Subsequently, I found that I had SkySafari set to the wrong date, August 8. When set to August 9, SkySafari's position was pretty close to SkyTools.

While in that area of the sky during periods clouds were absent over them, I took a look at the Pleiades and Hyades star clusters. Nothing scientific about the observations, they were just spectacular to look at in the Kowa 88 mm zoomed to 25x (which offers a TFOV of 2.4° at that magnification).

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I then looked for the planet Uranus, which isn't that challenging at magnitude 5.8. I knew the general location from memory (dropping down about 9° from Sheratan in the Aries stick figure) and was able to pick it out with the 15x56s and then the 88 mm scope. Of course, I checked the position against SkySafari, but especially in the scope, its bluish color was telltale. I was going to look for Neptune too, but that region of the sky was completely overcast by time I decided to do so.

I did notice Orion rising above the trees in the east, specifically, the bright stars Betelgeuse and Rigel, whose reddish and bluish-white colors were evident. Cloudiness diminished other stars in Orion.

The final target was the planet Mercury, potentially the first sighting of this elongation. It would rise at 4:36 am, so I was going to just wait for it at Carranza, and it would be after 5 am before it was above the tree line and high enough to see. Except that the eastern side of the field was now completely cloudy, so I wasn't optimistic. However, looking northwest, back towards home, it seemed to be clearing, so even though the time was getting late, I pulled off the field at 4:25 am and headed to Swede Run.

August 9, 2019, Morning, Swede Run

I made good time and arrived at Swede Run in Moorestown, NJ, at 5:05 am. I stepped out of the car and almost immediately saw magnitude +0.2 Mercury with unaided eyes at 4.8° altitude, following a slightly southward bent line down from Castor and Pollux. I then set up the Kowa 88 mm spotting scope, and at 5:08 am, I was able to see that Mercury was a thick crescent (the terminator was concave) using 60x, even though the seeing at that altitude wasn't very good.

This was my first sighting of Mercury for this fourth elongation of 2019 and it marks the 55th elongation in a row that I've seen it, starting in January 2011.

Before I packed up the scope, I looked at the double star Castor (there's about 5 or 6" of separation between the A & B components). It showed a clean split at 60x.

August 9, 2019, Evening, Backyard

The final observation of this report was a Great Red Spot transit of Jupiter's central meridian, predicted for 9:10 pm EDT on August 9. I lost track of the time and didn't get to the back patio until almost 9:30 pm. Again, I had the Kowa 88 mm apo set up in a minute or so, and using the 25 to 60x zoom eyepiece at 60x, as soon as I looked at Jupiter, I could see the GRS as a distinct brick-reddish dot.

Other details were visible too. The Northern Equatorial Belt was distinct, the Southern Equatorial Belt was indistinct (as it has been most of the season), there was some general darkening between the NEB and SEB, and other subtle variations in shade were apparent throughout the disc. A fine view.

I also glanced at the Moon. At 25x, I could just fit the Moon and Jupiter in the 2.4° TFOV (nice!), and at 60x, 1.32° TFOV, the Moon showed exquisite detail. I enjoyed seeing Messier A & B with its "comet tail" and the Alpine Valley near Plato.

Final Comment...

At this point, I'm immensely satisfied with the Kowa 88 mm apo spotting scope and I will probably order the 1.6x eyepiece extender to provide 40 to 96x for routine observation, with no need to screw in an adapter for 1.25-inch astronomical eyepieces, although I can still do that at will (update: the extender was ordered August 12).