

Observing Report for July 9, 2019, Carranza

by Joe Stieber

July 9, 2019

I left home at 12:15 am EDT and arrived at Carranza Field just before 1 am. The 47% illuminated moon set at 12:46 am and astronomical twilight would start at 3:40 am. My primary objective was to achieve first light with my “new” Explore Scientific 16-inch, truss-tube Dobsonian telescope. If all went well, I would look for faint Pluto ($m_v = 14.2$) and the faint galaxy, IC 1296 ($m_v = 15.3$) near M57.

I say “new” because I purchased this scope in August of 2018 from B&H in New York, but it’s been on the back burner since then. At the time it was on sale for \$2,000 (a couple of hundred dollars off the regular price), but I just checked B&H online and the current price is \$3,000.

As received, the secondary mirror had fallen off the spider’s mounting plate and there was a big chip out of the secondary (actually, it was more like ripped out as a couple of the mounting screws were bent). I called Explore customer service, they requested a couple of pictures and reasonably promptly, they said to send the now-loose mirror back (with a pre-paid shipping label) and they would replace it. On October 29, I received a new spider assembly with a new secondary mirror attached to it. Finally, during the last week of June 2019, I removed the old spider from the top cage and installed the new spider + mirror assembly

During the day July 8, I attached the altitude bearings to the mirror box and tried seating it on the low-profile base, which has a pair of plastic (PTFE?) pads on each concave side wall. I had already attached a clutch on each side of the base (it’s a disc that screws to the base side wall and has a PTFE pad that would press against the altitude bearing on each side; the tension is adjustable). However, I knocked the pad off one side when lowering mirror box in place. I tried cementing it on with plastic cement (not the ideal choice, but it was all I had available). It was missing after I set up at Carranza and I was unable to find it anywhere in the scope, the ground or in the car. I was also unable to find it after I got home, in the car, on the driveway, the front yard or steps, or in the house.

I did not try to set up the truss tubes or top cage at home, I would just figure it out on the field. As it turned out, it set up fairly easily, even though the instruction booklet was sketchy at best. The missing clutch pad didn’t seem to be a problem and I got favorable tension without it. I already have a plan to use some of my PTFE-coated (and sintered) woven fiberglass sheet material as a bearing and might use it on both sides if the first side works as expected.

The only major negative I encountered was the red-dot finder provided. It was awful. The light was too bright, even on the dimmest setting, it was difficult to align, and even when I thought it was aligned, I had a difficult time getting things in the field of view of my 30 mm, 82° eyepiece, which provides a 1.35° TFOV at 61x. I’m not terribly surprised about the red dot finder, and I expected to be using one of my Rigel reflex finders ultimately anyway (the poor performance of the red-dot finder will simply accelerate getting the Rigel set up).

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Because of the difficulty of pointing the scope with any reasonable accuracy, I didn't spend much time looking for Pluto, so I didn't see it. However, with IC 1296 being close to well-known M57, the Ring Nebula, I did make a serious search for it. M57 was more difficult to find than it is with my 12.5-inch Dob equipped with a Rigel finder (I can usually drop that scope right on it). I was then able to star hop the short distance to the IC 1296 reference stars.

Alas, I could not see the faint galaxy. That was due at least in part to the poor transparency. The Milky Way was visible, but not billowing as it was the previous Tuesday morning. Nevertheless, M57 looked terrific in the 16-inch as did M27, the Dumbbell Nebula. M31, the Andromeda Galaxy, was unremarkable, but it was still low in the northeast. Its companions, M110 and especially M32, stood out well. I'll need a better night and the Rigel finder before I can properly evaluate the performance of this 16-inch scope (but so far, it looks promising).

As first set up, the collimation was off (no surprise about that). I used my HoTech self-centering laser collimator and initially, the beam was about 4 inches from the center spot of the primary. It was easy to use the secondary adjustment screws to bring it to center. The return beam just missed the secondary at this point.

I then used the furnished adjustment tool, a three-foot rod that quickly mates with the three screw heads around the primary and allows adjustment while standing and looking at the secondary. Again, I was able to quickly adjust the secondary so that the return beam coincided with the initial laser beam red spot on the secondary (then the beam was also on the center hole of the collimator's viewing window).

One significant aspect I wanted to check was the height of the eyepiece when pointed at the zenith. Would I need a ladder or stool when pointed straight up? The focal length is 1,826 mm vs. 1,588 mm for my 12.5-inch. The latter has the eyepiece comfortably at eye level when viewing the zenith. The 16-inch has 238 mm (9.4 inches) more focal length, but luckily, the base and mirror boxes are shallow on the 16-inch, so despite the greater focal length, the zenith height of the eyepiece is still at my eye level too (no ladder or stool needed).

Breaking the scope down wasn't difficult, and despite my apprehensions of a truss-tube vs. the ease of setting up and breaking down my split-tube 12.5-inch, it really didn't take much longer. I pulled off the field generally satisfied, and I can see that with a little practice (and getting the finder and clutch issues resolved), this could be a workhorse scope. It's Chinese, so it's not a work of engineering art, but it looks like it will be worth the money. In that regard, I'm glad I got it when I did. Also, I was concerned about my ability to handle the weight of the 16-inch mirror box. It wasn't bad, not significantly different than the bottom half of my 12.5-inch, which holds the mirror. I wonder if the 16-inch uses a relatively thin mirror?

So, the night was more telescope busy-work than observing, but something that needed to be done to get the ball rolling. I now look forward to getting out on a clear, transparent, moonless night with the 16-inch!