

Observing Report for March 7 & 8, 2020

On Saturday evening, **07-March-2020**, I went to local Collins Lane Park in Maple Shade, NJ, to observe Venus near Uranus, when they were just 2.3° apart. My yard isn't suitable since there's a considerable wall of trees in the back, towards the west. The sky was clear, it was cold and quite breezy.

As soon as I arrived at 7 pm, I got out my 15x56 binoculars, pointed them at brilliant Venus, and with a slight shift to the left, easily picked up Uranus, despite residual twilight glow and more than trivial light pollution from nearby Philadelphia. Astronomical twilight didn't end until 7:30 pm EST.

I then set up my camera and took some snapshots, a couple of which are posted near the top of my web page at: <http://sjastro.org/>

I was back out to Collins Lane Park on Sunday evening, **08-March-2020**, to follow-up on the previous evening's observations of Venus near Uranus. They were about 2.2° apart on Sunday. There were a couple of other things I wanted to check on too.

I was there from about 8:00 to 8:45 pm EDT (we just switched to Daylight Time that very morning). Sunset was at 7:00 pm and astronomical twilight ended at 8:30 pm. Compared to Saturday evening, the temperature was a little milder, but mercifully, there was no wind, so the weather was rather pleasant.

The sky was quite clear, and to unaided eyes, the visible stars looked fairly steady, as if the seeing was good. The end of astronomical twilight is not as significant as it would be in the Pines because of suburban light pollution (this site is 8 miles east of Philadelphia City Hall). By 8 pm, if not sooner, it's probably as dark as it would get – especially since a nearly-full moon was already up in the east.

I decided to start out with my Kowa 88 mm apo spotting scope. With brilliant Venus as a guide, it was easy to get dim Uranus in the field of view. Venus was at magnitude -4.3 and Uranus was at +5.9, a 10.2 magnitude difference, or about 12,000x in brightness.

I was somewhat surprised that I could see the gibbous phase of Venus with little difficulty. The terminator had a slightly convex bulge at the standard maximum magnification of 60x (Venus was about 59% illuminated at the time). I then inserted the 1.6x extender for 96x and the gibbous shape was quite easy to make out, even though I wasn't using a moon filter to temper the glare of brilliant Venus.

That speaks for the optical quality of the scope (which has a fluorite element in the triplet apo objective) as well as the steady seeing. Additionally, I thought I detected a slight bluish color with Uranus, and even a tiny disc, at 96x, but I'm truly concerned that my existing familiarity from previous observations with larger instruments may be unintentionally affecting my perception. I also looked with 15x56 binoculars, and like Saturday evening, Uranus was easy to see. Of course, the gibbous disc of Venus, as well as the tiny disc and color of Uranus, were not evident in the binoculars.

In view of the apparent good seeing, I looked at the Trapezium, located in M42, the Great Nebula in Orion. The four primary stars, Theta A through D, were clearly seen and looked steady at 96x; however, I didn't really see the E & F stars (again, one has to resist "filling them in" from prior knowledge of their appearance). The aperture, 88 mm or 3.5", may be just too small.

I also looked for the secondaries of Rigel and Sirius. At the time, I didn't think I was seeing the B component of Rigel, although there was a distinct faint star just below A, plus the faint star (B?) moved in tandem with A as I moved the scope around, so it wasn't a ghost reflection. Checking several sources afterwards, including the WDS (Washington Double Star catalog) for the brightness and position angle, I now feel confident it was indeed Rigel B. I guess it seemed too easy.

However, no such luck with Sirius B. I thought I saw occasional blips of a dim star at the appropriate position angle, but it was more likely just bits of the roiling edge of Sirius and its changing diffraction pattern (although it was pretty stable compared to the usual telescopic appearance of Sirius due to the good seeing). In retrospect, I wish I had set up my 130 mm apo refractor to take advantage of the good seeing. Oh well.

While in the neighborhood of Rigel, I looked for R Leporis (Hind's Crimson Star). It was easily found by slowly swinging the scope view 3.5° west, and slightly north, of Mu Lep, the base of the "rabbit ears" of Lepus (not far below Rigel). Luckily, R Lep is easily confirmed by its intense red color, even though it's only in the high 8.x magnitude range now (per AAVSO visual estimates). I've seen R Lep many times before, but I never get tired of seeing its amazing color! I was not able to see it with my 15x56 binoculars, although I've frequently seen it with them under moonless skies in the Pines.

Finally, I looked for Keid B as discussed at the West Jersey Astronomical Society meeting on Friday night, March 6. At magnitude 9.5 and 83 arc seconds separation from the primary (Keid A), it's the most accessible example of a white dwarf star. Sirius B is a magnitude brighter, but as noted earlier, it's usually lost in the glare of Sirius A and is a challenge to isolate. In contrast, Keid B was fairly easy.

Keid A, at magnitude 4.4 along with magnitude 4.0 Beid (they're 1.2° apart in Eridanus), are an easy pair to spot with unaided eyes from the Pines on a moonless night. But last night in moonlit Maple Shade, I could not see them with unaided eyes. However, I easily found them in the 15x56s by swinging 15° west of Rigel. Then I used the "tree method" to find them in the spotting scope, i.e., drop the binocular view straight down to the horizon, note the trees there, aim the scope towards them, then sweep up until the view intersects the target.

The spotting scope is on a Fotopro Eagle gimbal mount (atop a robust Benro carbon fiber tripod), so it's a strictly manual alt-azimuth setup. I don't use a finder with this scope, I just sight down the tube to aim it, then the scope itself is the finder. At its lowest magnification, 25x, it has a 2.4° true field of view.

Anyway, Keid B was easy to see in the 88 mm at 96x, but initially, I was confused by the view. B was above-left of A while my printed SkyTools chart had B above-right of A. Then I realized I made the chart for my 130 mm refractor with a diagonal, so it was reversed left-to-right (and it was so marked on the chart). The spotting scope has an erecting prism like binoculars, so the view is correct left-to-right (both scopes are correct vertically).

All in all, it was a productive 45 minutes of observing on March 8!

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