

Observing Report

by: **Joe Stieber**

for: **Monday, 25-February-2019**

1. Baseball Field Complex, Maple Shade, NJ

After sunset on Feb 25 (5:37 pm EST), I went to the local baseball field complex to look for **Mercury**. As soon as I arrived, I spotted it with unaided eyes through the car window at 6:22 pm. Mercury was at magnitude -0.5 and about 10° altitude. That was the second sighting of Mercury for this first elongation of 2019 (the previous sighting was on Feb 16). This is the 52nd elongation in a row that I've seen Mercury, starting in January 2011.

Around 6:30 pm, I got out of the car and looked for **Mars**, magnitude 1.2, spotting it easily with unaided eyes in a darker sky about 48° altitude. Then, with 15x56 binoculars, I dropped down about 8° from Mars and spotted magnitude 5.9 **Uranus**, confirming its position against a SkySafari chart at 6:35 pm.

2. Carranza Field, Wharton State Forest, NJ

I arrived about 10 pm and left about 11 pm, so it was a nominal one-hour session, including telescope setup and breakdown time. The moon wouldn't rise until 12:49 am Tuesday, Feb 26.

The sky was clear, although transparency seemed less than ideal. Some wind, but much reduced compared to the strong winds the previous night (Sunday, Feb 24). To avoid distraction, I did not get out the 15x56 binoculars and instead, promptly set up the 12.5-inch Discovery split-tube dob. I used two Explore Scientific 82° eyepieces, 30 mm (53x, 1.6° TFOV) and 18 mm (88x, 0.93° TFOV). The 30 mm is an excellent "finder," while the greater magnification of the 18 mm is better for examination of found objects (both are native 2-inch eyepieces, so swapping them is easy).

I first found comet **C/2018 Y1 (Iwamoto)** near Theta Aur and M37. It was just a dim patch between a brightish star and an arc of several fainter stars. It was much less evident now in the scope than it was on Feb 9/10 at Carranza in the 15x56s. The previous night at Carranza, Feb 24, Iwamoto was near the threshold of visibility with the 15x56s, so indeed, it is fading (and probably won't be a good target for the Messier Marathon around new moon on March 6, or the following weekend nights of March 8/9 or 9/10 (especially for those unaccustomed to looking for dim comets). At my last look before breaking down the scope, Iwamoto showed movement with respect to the arc of several stars mentioned above.

I next looked for comet **46P/Wirtanen**. I haven't seen it since 15-January-2019 when I observed it with my 85 mm spotting scope at Carranza. Since then, I've tried a number of times with the 15x56s, but without success. Monday night, Feb 25, it was a very dim patch near Theta UMa and the front paw of the Great Bear, close to the threshold of visibility in the 12.5-inch scope.

After accomplishing my primary objective of seeing the two comets described above, I did some free-wheeling, deep-sky object spotting. Using just a Rigel reflex finder and the wide-field 30 mm eyepiece, there's little time wasted looking for things. For known objects, just drop it on the target ("point-and-shoot"). For occasional reference, mainly the non-fixed comets, I had

SkySafari running on my 12.9-inch iPad.

The following descriptions of objects seen in the 12.5-inch scope on Feb 25 are in no particular order (nor did I necessarily look for them in any particular order), although I subsequently grouped them by constellation for this report.

Ursa Major was quite productive. Near the end of the handle, Alkaid (Eta UMa), both lobes of **M51** were self-evident, and in M51a, the Whirlpool Galaxy (NGC 5194), concentric rings from the arms of the galaxy were seen. On the other side of the handle, forming a nearly equilateral triangle with Alkaid and Mizar (Zeta UMa), I saw the low surface brightness glow of **M101**, the Pinwheel Galaxy. Under the Big Dipper's bowl, at the western corner (Merak, Beta UMa), I saw **M97**, the Owl Nebula, and the nearby galaxy **M108**. Diagonally across the bowl off the northern corner, I saw not only the well-known galaxy pair, **M81 & M82**, but nearby galaxies **NGC 2976** and **NGC 3077**.

A number of galaxies in *Leo* were spotted, starting with the famous triplet under Leo's hindquarters, **M65**, **M66** and **NGC 3628**. Under Leo's belly, I found **M95** and **M96**. I should have swept around a little more and picked up nearby M105 and NGC 3384. I also looked at the golden double, **Algieba** (Gamma Leo), and was just able to split the moderately tight pair with the 18 mm eyepiece. Using Algieba as a guide, I moved a little less than a degree east and was able to spot the galaxy pair, **NGC 3226 & 3227**.

Canis Major showed the open cluster **M41** below Sirius, not only in the scope, but also with unaided eyes. A real treat that I saw in Canis Major is the Tau CMa cluster, **NGC 2362**. It's a "blinking cluster," similar to blinking planetary nebulae. Look directly at the bright central star, Tau CMa, and the fainter surrounding cluster stars seem to fade away, but move your gaze off center, and the surrounding stars pop out with averted vision. A couple of degrees north of Tau, I saw **145 CMa**, a nice blue-yellow double star that's been dubbed the "Winter Albireo."

East of Sirius in *Puppis* are the strikingly different open clusters, **M46** and **M47**. The latter was seen with unaided eyes, and in the scope, it was a coarse group of relatively few, but brighter stars. In contrast, the former has a spray of more numerous, but fainter stars, which makes it more cloud-like. M46 also has the planetary nebula, **NGC 2438**, which showed well in the scope.

In *Gemini*, I was able to see the open cluster **M35** with unaided eyes, and then in the scope, I also saw the angularly close but far more distant open cluster, **NGC 2158**.

Not far away in *Taurus*, I saw the supernova remnant, **M1**, which has the honor of being the first entry in Messier's venerable catalog.

In *Auriga*, where I saw Comet Iwamoto, I also saw the three well-known open clusters, **M37** (then near the comet), **M36** and **M38**. Close to M38 is the small open cluster, **NGC 1907**. These clusters are along a relatively straight, six-degree span in the southeast section of Auriga's pentagonal stick figure.

Using Arcturus (Alpha Boo) and Izar, a.k.a. Pulcherima (Epsilon Boo) as the base of a slightly-askew, 12° tall isosceles triangle (as viewed with unaided eyes), I pointed the scope at the estimated spot for the globular cluster **M3** in *Canes Venatici*. When I looked in the 30 mm eyepiece, it was already in the field of view, which is a good example of the efficacy of the

geometric method for finding celestial objects since there are no brightish stars particularly close to M3 for reference. I also looked at **Cor Caroli** (Alpha CVn) and saw it as the double star it is. I had hoped to use it as a guide for finding M63 (the Sunflower Galaxy), but I only had a rough idea where to look, and I didn't check SkySafari, so I didn't find it after a very brief search. M63 is about 5° northeast of Cor Caroli.

I remembered to look at **Kemble's Cascade** in *Camelopardalis*. Unfortunately, because of its 2.5° span, it won't fit in the 1.6° field of the 30 mm eyepiece. However, sweeping along the delicate string of nominal 8th magnitude stars was a fine sight. In the fork at the southeast end, I saw open cluster **NGC 1502** (a distinct object within the Cascade). To find Kemble's Cascade, I draw an imaginary line from Algol through Mirfak (both in *Perseus*) and extend it 1½ times the span between Algol and Mirfak to the Cascade. I noted that Algol was at its normal brightness, i.e., *not* at its dimmer eclipsed brightness.

Finally, I looked at one of the most-observed of the deep sky objects, the diffuse nebula **M42** in *Orion*. Within the nebula is the tight group of stars known as the **Trapezium**. The four main stars were easily seen and resolved, but I could not see the fifth and sixth stars. Good seeing is a requisite for that, and besides some residual turbulence from the change in weather, M42 was down to about 25° altitude in the west, so the seeing wasn't ideal (although not all that bad). I likely saw M43 at the edge of M42, but since I didn't specifically isolate it from M42 when looking, I won't count it in the list. I also forgot to look at NGC 2169, the "37" cluster (because it actually looks like the numerals 3 and 7), which is in Orion's upraised eastern arm. The Flame Nebula, **NGC 2024**, was vaguely seen near Alnitak (Zeta Ori) at the eastern end of Orion's belt. Lastly, I saw **M78**, a diffuse nebula between Alnitak and Betelgeuse (Alpha Ori).

So, in less than an hour of observing at Carranza, I saw two (2) comets, three (3) double stars (including the Trapezium) and thirty-one (31) deep-sky objects (nebulae, clusters, galaxies and an asterism), for a total of thirty-six (36) items. Although it consists of two NGC objects (5194 and 5195), I counted M51 as a single object here. Conversely, since they're not a single Messier object like M51, NGC 3226 and its interacting companion, NGC 3227 (in Leo) are counted separately.

In brief, it was well worth the trip to Carranza!

Last update: 02-March-2019, 7:45 pm EST