

# Observing Report for July 12 & 13, 2019, Backyard

by Joe Stieber

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## July 12, 2019

Observing on Friday night, July 12, was unplanned. After leaving the local pizza joint with a friend about 9:30 pm EDT, we looked up and saw the 86% illuminated Moon, with bright Jupiter about 10° east of it. My friend said he saw a halo around the Moon, but I didn't see one.

I was back home a short time later and decided to check the Moon with my 15x56 binoculars, but still no halo. A later text message from my friend reported that he saw similar halos around oncoming headlights on the way home, so perhaps the lunar halo was a result of his cataract(s).

Since I was already outside with my 15x56s, I took a look at Jupiter and saw just three Galilean satellites. Curious about the fourth satellite, I went back inside and checked WinJUPOS, which indicated Io was then in occultation and would be in Jupiter's shadow after emerging from the occultation. Then around 11:50 pm, it would egress from the shadow about 14 arc seconds east of the Jovian disc — so it would seem to appear "out of thin air."

I decided to watch with my 85 mm spotting scope (sets up in literally a minute or so) and I watched at its maximum 60x. I noted the first pinprick of light from Io at 11:49.5 pm (using my accurately-set wristwatch), and within two minutes or less, it was up to full brightness. The appearance of a Galilean satellite out of Jupiter's shadow against a dark sky removed from the disc is still an amazing sight to me!

## July 13, 2019

While checking on Jupiter Friday night, I noticed there would be a Great Red Spot transit of Jupiter's central meridian at 11:48 pm EDT on Saturday night, July 13. Jupiter itself would transit the celestial meridian at 10:32 pm, so it would be well placed for viewing. On top of that, the weather forecast looked good, so I was determined to get my Stellarvue 130 mm, f/7 apo refractor out to observe the transit. In addition, the four Galilean satellites would be on the west side of the planet in a parallelogram configuration.

Indeed, the weather was fine, and after sunset on Saturday, I noticed the Moon and Jupiter were close together, with Jupiter about 3.3° west of the Moon at 9:13 pm when I captured a snapshot of the pair with my Canon EOS RP mirrorless digital camera and a Canon EF 400 mm f/5.6L telephoto lens. This was near the middle of twilight (sunset at 8:29 pm, astronomical twilight would end at 10:27 pm). Therefore, the mosquitoes were terrible, and correspondingly, I had a number of bats whizzing over me while I was taking the snapshots.

Around 11 pm, I started setting up the 130 mm refractor, and by 11:20 pm, I was able to view Jupiter and easily saw the Great Red Spot. By then, the 93% illuminated moon was 4° east of Jupiter, but it didn't matter. More importantly, the seeing was pretty good, I'd estimate a 4 out of 5, so the Jovian surface features were readily seen. I was mainly using my Stellarvue 4.7 and 3.6 mm 110° eyepieces, providing 194 and 253x respectively.

My refractor + diagonal view was oriented vertically correct but reversed horizontally such that celestial west was to the left. I noted that the satellites all looked disc-like, not stellar, but the satellite closest to Jupiter was more obviously disc-like than the others. When I went back inside and checked WinJUPOS, it was Ganymede, which was indeed the largest at 1.64 arc seconds apparent diameter.

I also looked at Saturn, which was lovely of course with the rings and the Cassini Division was obvious in the ansae with some banding on the ball — a more subtle beauty than Jupiter, but how can you call the rings subtle?

Jupiter and Saturn were about 25.5° and 26.5° altitude at 11:45 pm, so they weren't that high, but I also observed Antares, which was down to 19.5° altitude. I was hoping to split the elusive secondary, Antares B, which is about 2 arc seconds from the primary (and magnitude 5.4 vs. 0.9 for the primary).

I finally succeeded in intermittently isolating B at the nominal 9 o'clock position in the mirror-reversed view. I forgot where it was supposed to be, so afterwards, I checked SkyTools and confirmed it. I had tried on several occasions before to split it with the 130 mm refractor from the backyard, but until now, with no success. I suppose the relatively good seeing last night was the main factor.

With the nearly-full moon and a suburban location, deep-sky observing was impossible. Nunki (Sigma Sgr) was visible with unaided eyes about 6° below-right of Saturn. I used it as a guide to find Kaus Borealis (Lambda Sgr, the tip of the Teapot's lid) and then M22, about 2.5° back towards Saturn. This usually-prominent globular cluster (at least it is on a moonless night in the Pines) was only vaguely visible in the 130 mm (and vaguely might be overstating it a bit).

I even took a brief tour of the moon with the scope since I was already out anyway — it was a nice view.

### July 15, 2019

I suppose this qualifies as the tail end of the weekend, but on Monday morning, July 15, I spotted the planet Uranus from my front yard at 3:44 am EDT (two minutes before the start of astronomical twilight) using 15x56 binoculars. This was my first sighting of Uranus for this apparition. It was magnitude 5.8 in the constellation Aries, at 31° altitude and 99° azimuth.

I was surprised how easy it was to find. Starting with the Aries stick figure, Hamal and Sheratan point towards Eta Psc. From there, I dropped down to Omicron Psc and moved east until I found a brightish "star" with a seemingly bluish color. The color may be wishful thinking on my part, but I noted the position of nearby fainter stars and it matched with Uranus in SkySafari on my smartphone. This is largely the same path I used before solar conjunction, but Uranus is now farther east of Omicron, about 8° now vs. a few degrees in March. It might be time to start dropping south from Hamal and Sheratan rather than routing through Pisces' eastern rope.