

Despite a scheduled SJAA Star Party and superb conditions, I almost had Fremont Peak [near San Juan Bautista, California] to myself September 23 [1989]. An hour past sunset, I drove part way down the east-west road in Coulter Camp and had my choice of where to set up. Usually I can scarcely find a place to stand on that road, much less drive in. There were only about ten telescopes in the park, and fewer than 20 people in Coulter Camp, though I heard there had been another 20 people at the FPOA's 30-inch. [The FPOA is the Fremont Peak Observatory Association]

What a lovely night! A temperature inversion made conditions comfortable and dewless. Widespread dense low fog and clouds blocked city lights from the coastal plain and the Bay Area, so it got pretty dark. The sky was very transparent: With the naked eye, I could see M33 with averted vision early in the evening, when it was 50 or 60 degrees off the zenith, and could hold it steadily with direct vision later on, when the fog was thicker and the galaxy higher. With my 4-inch Celestron refractor at 50X, I could see Pleiades nebulosity when the cluster was still partly blocked by trees at the end of the road. The Merope nebula was easy, as was a smaller wisp of nebulosity that extends from Maia toward Alcyone. Later on, all the bright Pleiades stars appeared embedded in irregular balls of diffuse nebulosity. I thought I saw the Pleiades nebulosity with the naked eye as well -- I often think so -- but when stars are near, it is hard to distinguish irradiation within the eye from nebulae, so I am never quite sure.

Someone had a finder chart for Uranus. I chased it down in the four-inch. The tiny greenish disc was unmistakably non-stellar at 111X. A nearby star of similar magnitude provided an interesting comparison -- I was able to show some relative newcomers the difference between a star image and a planetary disc not much bigger. (By the way, do you all know that your deep-sky observations don't count unless you have looked at all the planets first?)

One fun thing to do with telescopes is to observe faint objects with small apertures. I have had a thing about doing so with Stefan's Quintet. I tried the 4-inch, and sure enough, at 81X, with averted vision, I could intermittently glimpse haziness at its position. Averted vision is not the best for details, but what I suspect I was seeing was the brighter nuclear region of one of the galaxies. I saw no structure in the blur. The magnification 20 per inch of aperture, with a 1.25mm exit pupil, is a lot higher than most authorities recommend for observation of faint fuzzies, yet the Quintet was much harder to see at lower powers. This observation is not my record: I have similarly detected the Quintet with Frank Dibbell's 90mm fluorite refractor. [I later bought this instrument.]

Presently I put away my own equipment and wandered over to the FPOA observatory. About five people were looking at the Saturn

Nebula. The 30-inch gave a beautiful view of this planetary. The ansae -- the "rings" of the nebula -- were easily seen and were markedly wider and brighter at the tips. There was structure visible in the elongated disc, and a hint of the central star.

I was getting ready to leave when I noticed a telescope I had not seen, at the east edge of the big parking lot in Coulter Camp. Here was SJAA member David Enos, with his 5-inch f/6 apochromatic Astro-Physics refractor. I had heard a lot about these instruments, and was eager for a look through one. David let me observe for a bit. This unit is a near-perfect rich-field telescope, and was doing a magnificent job on faint, extended objects. The dark sky and excellent telescope were just begging for a real challenge, and the FPOA had just given its coveted "No One's Gonna Believe Me But..." award to someone *other* than me, so I asked David a leading question.

"Have you ever tried for the Sculptor System?"

"No."

I had. During the early 1980s I attempted to observe this large, faint dwarf galaxy with several instruments, including my 8-inch f/5 Newtonian and my 11X80 binocular, without success. The galaxy is over a degree wide yet fainter in apparant magnitude than a 9th-magnitude star, so it's a toughie. I know of only one visual observation of it, by Steve Coe in Arizona, with a 4.25-inch reflector at 16X, reported by Walter Scott Houston in the November 1988 Sky and Telescope. [Possibly more since.] I gave up, not because I believed it was impossible, but because I had learned the nearby star field too well -- while observing at the limit of human perception, it is all too easy for your mind and eyes to play tricks when you know where something ought to be. But that was years ago, and on September 23 [1989] all I could remember about the position of the Sculptor System was that it was somewhere (ta-da!) in Sculptor. Now was the chance for an honest re-try.

I got a description of the location from Burnham's Celestial Handbook -- four degrees south of alpha Sculptor -- but carefully did not look at any charts. (I knew where alpha was because I had used it to star-hop to NGC 253 and NGC 288 earlier in the evening.) We put a 55mm Plossl eyepiece, with 2-inch barrel, into the 5-inch, and I started looking a couple of fields south of alpha. I saw nothing I could call an object, but presently it occurred to me that with averted vision, there was a place perhaps half a degree to a degree in diameter where the sky background seemed a little brighter than elsewhere. I centered the area and asked Enos to confirm. He agreed that at times that region did appear a bit more luminous than the neighboring sky.

This particular telescope/eyepiece combination is underpowered, in that fourteen diameters is too little magnification for a five-inch aperture: The resulting 9mm exit pupil is some 2mm larger than the pupil of the eye of a typical adult. By observing with this eyepiece, we were effectively stopping the instrument down to about four inches, wasting light, but ensuring that the pupils of our eyes were filled with light, so that the image of any extended object on our retinas was as bright as it could possibly be.

It was exciting to see a glow, but not particularly convincing. We tried more magnification. With a 32mm Erfle in a 1.25-inch barrel, I could see no glow, though the problem might merely have been that the narrower field did not allow me to see enough of the darker background to make the bright area apparant. Back to the 55mm. The glow was still there, and when I moved the telescope rapidly back and forth by hand, by ten or twenty percent of the field width, it was easier to see.

It was time for charts. I had my AAVSO Variable Star Atlas with me, but was too lazy to dig through the huge stack of pages for the right one, so I checked my old Norton's Star Atlas to see if I had ever plotted the Sculptor System. Sure enough, I had. It's hard to read Norton's to better than a degree, so the position was not very accurate, but I returned to the telescope and star-hopped from alpha to sigma Sculptor, and thence to my pencil-mark, and found myself looking squarely at our glow. Hmm.

Then I remembered that I had with me another excellent instrument for observing faint low-contrast objects, namely my Orion 10X70 binocular, with enhanced low-reflection coatings on all surfaces where light moves between air and glass, and with BAK-4 prisms. I once compared this instrument to a binocular that was identical but for having conventional coatings and regular prisms, and found the enhanced unit noticeably better. I got it out and took a look. I could see the glow. It helped to pull my jacket up over my head and poke the binocular out the neck. I carefully noted the glow's position with respect to a 6th magnitude star south of sigma Sculptor, and with respect to a handful of 8th or 9th magnitude stars a degree or two generally west of the 6th magnitude one. Then and only then did I dig into the AAVSO atlas, whereon I had long ago plotted the Sculptor System with more accuracy.

We were right on. Actually, my estimate of the center of the glow was about ten or fifteen arc minutes north of the center of the plotted position, but the galaxy is more than a degree wide, and it is hard to determine positions when observing with averted vision. (And I have not yet found a photograph of the Sculptor System suitable for checking for possible asymmetric brightness.)

Determining a position first, then going to the charts for confirmation, is about as convincing a detection as you can get. I

was pleased to log this observation, and most grateful to David Enos for the opportunity to use his fine telescope.

But I seem to have missed my calling. I should have taken up spiritualism. After this experience, seeing ghosts would be easy.

Hope you have -- or had -- a happy Hallowe'en.

-- Jay Freeman, October 1989