I was looking for new observing programs when it occurred to me that I had no experience with a portable long-focus refractor. So I decided to get one and see what using it was like. There is much argument about the merits of different makes and models of these instruments, but people seem to agree that Unitron was in general a very good mark, so that if I used one I would certainly be giving this style of telescope its best chance.

My experience as an amateur astronomer makes me think that Unitrons are very scarce: In over half a century, I had only seen three of them in person, and only one was in the field being used. The first was in about 1960. It was a 150 -- a four-inch with the bent-fork altazimuth mount -- that a friend of my father's had recently bought new. He had traded down from a 10-inch Newtonian and was very disappointed. He said that advertising notwithstanding, nothing in the quality of the views made up for the loss in resolving power and a one-magnitude drop in limiting magnitude. He also had complaints about the mechanical quality; he had had to shim the focus tube with aluminum foil to keep it from rattling and also said that the mounting was so wobbly it was likely to collapse if you wiggled it too much. (I was not allowed to try this for myself and see.) The second was circa 1980, when a member of a local club occasionally brought a 114 (60 mm altazimuth) to star parties. It gave good views for its size, and the mechanical works seemed nice. but the tripod was a little rickety, and in a field that included Schmidt-Cassegrains to 14-inch aperture, Newtonians to 18 inch, and the occasional early Astro-Physics triplet, nobody really noticed the little refractor -- it was more like a cake decoration than cake. The third one was a 142 at about the same time. It sat in a telescope store's showroom for many months. It looked sturdier than the 114.

My 142 came from a collector who fitted it out from his collection of parts. There were a lot of cases, a lot of pieces, and of course no manuals, but I managed to get it together without breaking anything. It was fully functional, the tripod was indeed sturdy, and the equatorial head was beautifully made and superbly functional -- that much of the telescope is certainly a keeper. On the other hand, the leg length was adjustable only in about three-inch increments, there was no level for the tripod top, no vernier for polar-axis azimuth alignment, and no optical means of polar alignment, so it would be hard to make much use of the setting circles.

For first light, I took the instrument to a popular mile-high site in the southern California mountains, about ten miles west of Tejon Pass and about an hour's drive from my home. This area can get very dark when the marine layer moves in and turns off Los Angeles and the San Fernando Valley, but on this particular night the layer was thin. No matter -- I have a large collection of 0.965-inch-diameter eyepieces, so I was prepared to twiddle with magnifications to get just the right level of background sky darkness to see deep-sky objects. Temperatures were not quite up to shirt-sleeve, but remained warm all evening. Seeing was so-so.

Setup was swift and straightforward. The main problem was figuring out how to keep the tripod legs from becoming tangled while I was unfolding them and installing the spreader, but that will come with practice. I was impressed by the ease of use of the mount. The clutch and slow-motion for declination are a hand's breadth from the focuser at all times, and with two large knobs and two long handles to grab for, it was always easy to find something that would adjust position in right ascension. Furthermore, it is a cinch to loosen the clamshell and rotate the tube so that the finder is always in a comfortable position.

In about three hours' observing I logged 77 objects altogether -- 56 Messier objects, Jupiter, Saturn, Izar, and eighteen other deep-sky targets. I used 48x (25 mm Kellner) for all but two observations. Jupiter and Saturn were still there, but I am primarily a deep-sky observer so went on to other things. Let me just mention a few highlights.

I got a nice split of Izar at 96x (12.5 mm Orthoscopic). There were no surprises in the Messier stuff -- I worked from M104 and the Leo galaxies all the way through Virgo and up most of the summer Milky Way. (More objects were visible, but I was getting tired by midnight and so did not view all that were in sight.) The Leo Triple was pretty -- all three galaxies were clearly elongated. The heart of the Virgo cluster was wonderful, as usual. I always enjoy the smile face at the center of the cluster: M84 and M86 are the eyes, elongated NGC 4388 is the mouth and NGC 4387 is the nose. All these galaxies were easy in the 142. I also looked at Markarian's Chain, and spotted all the usual suspects; namely, NGC galaxies 4438, 4435, 4461, 4458, 4473 and 4477. Near M53 was the much fainter globular NGC 5053, not quite in the same 48x field.

The summer Milky Way is of course full of fantastic stuff. M8 showed much nebulosity and many stars. I could see the two rounded lobes of M20 -- these show as different colors in larger telescopes, but I noted no hues on this occasion. I could not see the dark lanes in one lobe that give the nebula its name; perhaps I should have tried more magnification. All the Messier open clusters were resolved, and many of the globulars had the granular appearance of partial resolution. M17 showed the Swan, the nebulosity around M16 at least vaguely resembled a flying eagle, M27 looked like an apple core, and so on.

I try to do a Messier survey with every telescope or binocular that comes into my hands, but for the 142 I have been thinking of doing something a little more interesting -- a Herschel-400 survey. Several objects this evening were on that list. In my experience, the most difficult H400 object for small apertures is NGC 6118, a rather obscured galaxy in, would you believe, Serpens. That part of the sky was well-placed, so I looked for it. At 48x I could not see the galaxy, so I increased magnification to 60x (20 mm

Kellner) and found I could hold it with averted vision. A Herschel-400 survey is a lot of work, but a lot of fun. I have not yet made up my mind whether to try to complete it with this instrument, but the visibility of NGC 6118 suggests that the 142 can do it, and indeed, I have done the H400 list with less aperture.

I broke camp at a bit past midnight, stopped at a truck stop on Highway 5 for a mocha, and drove home. It was a good night, and I hope to go back out soon and do some more.

To be continued ...