In February, 1998, Orion Telescope Center announced a clearance sale on their then-current models of "Little Giant" binoculars, and I ordered a 14x70 at the quite low price of $269. I have long owned a 10x70 of the same family, but the pupils of my eyes no longer expand to 7 mm, so I thought the higher magnification would be appropriate.

I later learned that Orion was dropping its old vendor of the Little Giants because of availability problems -- there were never enough binoculars available soon enough -- but by that time I might have guessed it: My binocular did not ship till early July. Orion scrupulously sent regular mailings announcing that the item was back-ordered and that the expected ship date was slipping, and did not charge my credit card until the date of ship.

I do not now have a delivery address suitable for United Parcel Service, so the Orion mail-order folks sent the binocular over the hill from Watsonville, California, to the Cupertino store, where I could conveniently pick it up. A few days after it arrived, I retrieved it.

The 14x70 generally resembled its 10x cousin: It weighs between three and four pounds, has center focus, uses BAK-4 prisms, and is fully multicoated. This size instrument is at the outer limits of what I can hand-hold steadily enough to observe for an extended period, but when all is said and done, I can indeed do so, and I use binoculars mostly as highly portable quick-look instruments, so the ability to hand-hold one is important. There are certainly binoculars of similar aperture and magnification with better optics -- the Fujinon 16x70 is a tough mark to shoot at in this performance range -- but the lighter weight of the Orion unit makes it much more suitable for my style of use.

The binocular itself was quite similar mechanically to my older 10x70, but the case it came in was of newer design, and was perhaps a little more sturdy. Standard equipment included the case, straps, asymmestric eye cups, and a tripod adapter.

The instrument appeared satisfactory at the Cupertino store, so I took it to Fremont Peak State Park a few days later, during the dark of the Moon, for field testing and to start a Messier survey. There a problem emerged. There was something wrong with the optics in the right barrel. I could not get stars to focus sharply; the best I could do was obtain a sharp point surrounded by a diffuse glow. The focus was soft, too -- the point-and-blur appearance lasted for a noticeable motion of the focus mechanism. The problem was with the optics, not my eyes: When I turned the binocular upside down, the soft focus followed the barrel; it did not remain with my right eye. It wasn't an off-axis problem, either -- it happened even when the star in question was dead center in the field.

It a week or so to figure out what the difficulty was, because -- if I am correct -- it rarely seen in small binoculars: It was spherical aberration! Not that binoculars are somehow specially resistant to this defect, but the amount required to show up at such a low magnification is so large that it is unlikely to appear in any half-way reasonably manufactured system. I have never seen spherical aberration in a binocular before, and I would certainly not have expected it in an instrument bearing the "Japan" label, as this unit did. If Japanese firms can make this large a mistake in quality control, perhaps there is hope for the Detroit automobile manufacturers after all.

Yet I put off dealing with the defect for a while. Leo was sinking into western twilight, and I was anxious to start a Messier survey. My main observing program that evening was to check out my recommissioned Celestron 14, but I observed with the binocular for an hour or so after end of twilight, and for a little more at the end of the evening.

This size of instrument is just about optimal for rapid surveys of Messier's catalog. In a 14x70, all the Messier objects are large enough to be clearly non-stellar, and bright enough to be easy to detect. Furthermore, the binocular's four-degree field of view is wide enough to make finding them easy. By the time I went home, I had logged 84 Messier objects. There were no surprises in appearance: Most open clusters were granular to resolved, and a few galaxies were elongated or otherwise looked different from a mere smudge. I also looked at a few other easy binocular objects, notably the east and west arcs of the Veil Nebula and the Helix Nebula.

I took the instrument to Lassen Peak with me during the next weekend, and logged another six Messier objects late one evening.

Then it was time to address the optical problem. Since it was subtle, and since this discontinued item might no longer even be in stock at Orion, I decided to drive to Watsonville rather than try to deal with the matter via 'phone and mail. The technician I talked to was polite and competent: He agreed that there was a problem with the right barrel, checked the computer and found two 14x70s still in inventory, and went back to the warehouse area to fetch another. Yet it took him a long time to return, and when he did, it was with bad news: "They're all like that," he said. We were both surprised that such a problem would be widespread in a lot of Japanese optical goods, but in his experience, quality control did slip up occasionally, and this was evidently a bad batch.

He offered me either a complete refund or an exchange for the newer, 15x70 model which had replaced the original 14x70. I had handled

the 15x70 at star parties, and found it optically nice and much lighter than the 14x70. My immediate reaction was to take the exchange, but I worried whether the lighter weight meant that the new unit would be less durable, or less likely to hold collimation. While wondering what to do, I noticed a 14x70 on display in the showcase. "Do you suppose that one has the problem?" I asked, and on investigation, it did not: The display unit had good optics, with no more problem than the field curvature that I had expected with the relatively short focal-length eyepieces. Furthermore, it was in immaculate condition, and Orion was willing to let me take it with the same 30-day exchange and five-year warranty as a new purchase, so I left the store with that one.

I expect the 14x70 will be my workhorse astronomical binocular for a while to come, and I commend Orion for handling the optical problem with the first unit honestly and expeditiously. And if any readers have Orion 14x70 Little Giants from near the end of the product's life in the Orion catalog, you might check them carefully for possible optical problems.