



Preface

Several years ago, a combination of age and abuse finally took its toll on my back and it became increasingly uncomfortable to use an equatorially mounted telescope for visual astronomy. I considered the option of setting up a system whereby I could operate a telescope remotely from the warmth and comfort of my study and see the resulting images on my computer screen. Almost immediately it became blindingly obvious to me that, while this is a pleasurable option for many amateur astronomers, it was not one that suited me. To do so would take me more into the realms of what some call “serious” amateur astronomy, which has rapidly embraced the advances that modern microelectronic technology has to offer, enabling the serious amateur to make significant contributions to astronomical knowledge. The thought of going further down this route brought it home to me: the reason that I “do” astronomy is for pleasure and relaxation and the option that I was considering was in danger of making it seem to me like another job.

I had always used binoculars for quick views of the sky when I did not have time to set up a telescope, and for more extended observing when, for example, I was waiting for a telescope to reach thermal equilibrium. I also always keep a binocular in my car so that I usually have an observing instrument reasonably close by. Now my back injury meant that my binoculars were the only astronomical instruments that I could comfortably use. I felt as if I was resigning myself to this. I considered my options again and decided that, if I was going to be “stuck” with binoculars, I might as well at least have some good-quality ones. Almost simultaneously, a large astronomical binocular was advertised for sale at an attractive price on *UK Astro Ads* and I took the opportunity and purchased it. This turned out to be the best decision of my astronomical life; it was like discovering visual astronomy all over again.

Why was this? Firstly, I became less “technological.” I no longer had an equatorial mount to align, computers to set up, CCD camera to focus, power supplies to manage. Within minutes of making a decision to observe, I could be observing.

Secondly, and there are no other words for it, I was blown away by what I saw through the two eyepieces of a good 100 mm binocular. The first object that I turned my new acquisition to was the Great Nebula in Orion. It was like seeing it for the first time. I began to see detail that I had never before noticed visually, and some of this disappeared if I used only one eye. The pleasure of just sweeping the skies seeing what I can find is far greater than ever it was in a telescope—two eyes give one the impression that one is actually out there! Lastly, I found that I had stopped wondering if I would ever discover a comet or a supernova and had stopped thinking to myself that it was about time I did some more occultation timings. I was observing *purely* for pleasure. I realized that this was something that I had not done since I was a child. I had rediscovered my astronomical roots.

There can be pressure in amateur astronomical communities to participate in observing programs, to use one's hobby to advance the status of amateur astronomers. There can also be a tangible, and not always unspoken, attitude that someone who observes only, or even primarily, for pleasure does not really deserve to be called an amateur astronomer. My one regret is that it took me so many years to realize that this is a load of nonsense. The primary purpose of a hobby is enjoyment. If people find enjoyment in "serious" amateur astronomy, then all well and good, but, I contend, it is equally legitimate to enjoy it purely for recreation. Many have found that binoculars lead one to do exactly that.

Recreational observing is not the only application of binoculars; they are also well-suited to some aspects of serious astronomy. Big binoculars with their wide fields of view are excellent tools for visual comet hunters, as the names George Alcock and Yuji Hyakutaki attest. There are many variable star programs specifically for binoculars, such as that run by the *Society for Popular Astronomy*.

With even modest binoculars, there is sufficient in the sky to keep one enthralled for years; with good-quality big binoculars, there must be sufficient for decades. This book is for those who wish to explore that further, either with binoculars as an adjunct to a telescope or, as an increasing number of us are finding, as a main instrument. Its aim is to give a thorough understanding of the optical systems you will be using, and to indicate those criteria that should influence your choice of binocular. Once the choice is narrowed down, you will need to evaluate your options and there are simple tests you can do to give a good indication as to the potential of your choice. As with any aspect of astronomy, things do not stop with the optical system itself. You will, I hope, want to mount your binoculars—even small, normally hand-held, ones show so much more when mounted—and there are numerous accessories and techniques that can increase your observing comfort, pleasure, and efficacy. Lastly, of course, there are the objects themselves that you will observe. I have indicated which are suitable for small (50 mm aperture), medium (70 mm aperture), and large (100 mm aperture) binoculars. Obviously, all those in the 50 mm class are observable with a larger instrument (although a few are more pleasing with the wider field of the smaller instrument), and most of those for the larger instrument can at least be detected with the smaller one. These are intended as a "taster"—there are many more available to you. For example, some observers have seen all the Messier objects with 10×50 glasses! I hope that

southern hemisphere readers will feel that I have made sufficient effort to include a good representation from their wonderful skies. The charts are simple black-on-white, as that is by far the easiest to read under red light.

Whatever category of binocular observer you fall into, there is something here for you. I hope you will get out there and find the same enjoyment from your binoculars as I continue to have from mine.

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