

Binocular Astronomy

By Dale Olson, Docent – Cameron Park Rotary Community Observatory

Some time in your life someone or something causes you to look up and get acquainted with the night sky. The “some thing” for me was a Boy Scout summer camp when my sons completed the Astronomy merit badge. That was my introduction to observing our own galaxy and getting familiar with some of the deep sky objects. I didn’t realize how many features of the night sky were available to me with the standard binoculars that I had already owned.

I was using my 8x30 binoculars regularly but luckily a friend had a pair of 7x50’s, which showed the objects more brightly. Later, another person let me use their pair of 10x50’s and the objects displayed even more clarity and brightness. The field of view was narrowed so I soon learned there would be a trade off between detail and field of view. It might be obvious but do not buy binoculars until you have a chance to try them out first. The various sizes have their advantages and disadvantages. Here are some things to consider:

- Power refers to the magnification, or increase in size, of the object being viewed. It is generally the first number in the type: 7x50 means the binoculars will magnify 7 times. The size of the objective lens determines how much light the binoculars will gather. In general, bigger is better. In the example of 7x50 binoculars, the second number, “50”, refers to the diameter of the lenses in millimeters.
- Exit Pupil is the beam of light that exits the binoculars and enters the pupil of your eyes. Generally speaking, the pupil’s ability to dilate lessens with age. A store that has trained salespeople in optical equipment can give you their recommendations regarding the appropriate exit pupil/binocular combination.
- Eye relief refers to the distance from the binoculars eyepiece to your eye. For example eye relief is usually 4 or so millimeters without glasses. Some binoculars are available with 15 millimeters eye relief for those who wear glasses and want to keep them on.
- Field of view is expressed as feet at a thousand yards. For Astronomy purposes, FOV is expressed as degrees of arc. For example, the full moon appears as an angle of one half degree of arc.
- Generally, larger binoculars are heavier and more difficult to hold for prolonged periods of time. Some higher end binoculars also have image stabilization. These make it easier to see objects but tend to be heavier. Examples of sizes of for astronomy are 12x70, 11x80, 20x100 etc.
- Zoom features are not really a consideration due to the cost of getting good quality.

Common and highly recommended for the beginning astronomer are 7x50’s because they are easily held, they gather a lot of light and they are easy to hold steady so the images are not shaky. 10x50’s enhance the brightness and clarity of your objects and while they still can be held, they are better when used with a tripod for stability. Remember your neck strap for the safety of the binoculars and for the ability to be hands free when handling your sky charts and maps.

A major benefit in using binoculars for Astronomy is that they do not invert the image, as a telescope does. This makes it much easier to glance back and forth from a star chart to the sky. It also makes locating objects such as the Andromeda Galaxy, star clusters, and nebulae easier.

Before you make any investment, check into the local observatory at the Folsom Lake College sponsored by the Cameron Park Rotary Club www.communityobservatory.com which is free to the public. The observatory is pursuing the purchase of a pair of mounted 25x125 binoculars for the ultimate observing experience. The Sierra Star Gazers www.sierrastargazers.org have monthly “star parties” where you can also meet people that are always happy to share their knowledge and equipment and maybe you will find someone or “some thing” that helps you get acquainted with the night sky.