

On Advice for a First Telescope

Here are some thoughts on guiding the purchase of a first telescope.

Beginner telescopes are a marketing term because there are no beginner telescopes.

Why — because budget is the real factor. Advice for a \$200 budget is very different from a \$2000 budget.

Save money for this hobby. Why — because money saved gives greater flexibility when it comes time to make a purchase. Also, there will be a degree of on-going costs for accessories or other items.

Binoculars may be a good idea for some, but when someone mentions a desire for a telescope, binoculars as an answer will often disappoint. Why — because views of planets and most galaxies (etc.) are small and without detail. Nevertheless, if someone already owns binoculars, then they can be used immediately on our Moon for zero cost.

Size and weight are important because of where the observer is located. The equipment must be easy for that particular observer to use. Why — because 3rd floor city apartment dwellers have different constraints than rural landowners who are different from suburban retirees using sport cars or RVs. Astronomy gear is unlikely to be used if it can't be readily moved and/or setup, which is why "grab-and-go" telescopes are common.

Telescopes with computers have their uses and benefits, but also have drawbacks. And when one gets the gear working, the eyepiece view may be just a few stars and not that wonderful galaxy or nebula (because of magnification, light pollution, poor transparency, lack of dark adaptation or viewing skills). Computer benefits ==> Helps to find objects in light polluted skies. Very efficient when moving from one object to another during a long observing session. Drawbacks ==> Cables, batteries, menu navigation, bright indicators, telescope alignment to the stars, slight pointing inaccuracies resulting in doubts.

Astrophotography, in general, is often both difficult and frustrating, and has a steep learning curve. Why ==> because there are many "details" to address, most of which are very, very specific to one's equipment, the targets of interest, and the opportunities for imaging. Many imagers choose to use refractors or compound telescopes (Schmidt or Maksutov Cassegrains) on a tracking mount as their preferred optics.

Most entering the astronomy hobby stay less than 5 years, especially if their expectations are dashed. Why — because they followed enticing marketing pitches or the advice from other hobbyists not directly relevant to *their* particular circumstances, or just because this hobby can be difficult. Advice should be more about the person and their situation than a telescope.

With all of that said — I believe a telescope with 3-to-6 inch optics on an alt-az mount (i.e., with intuitive up-down, left-right movement) will serve most beginners quite well, especially if a shorter focal length allows a decent (2-degree or so) field of view. Also, because *every* telescope is a trade-off between good and not-so-good features, there is no perfect or best telescope. Those who remain serious about observing generally end up with more than one telescope, and one with 3-to-6 inch optics should still remain useful in the company of others.

Some individuals like to learn by reading — most do not. For those desiring printed literature (besides those ubiquitous instruction manuals), consider "Nightwatch" by Terence Dickenson (192 pg, \$35) or "The Backyard Astronomer's Guide" by Terence Dickenson & Alan Dyer (368 pg, \$50). If you are serious beginner and opt for just one book, consider "The Backyard Astronomer's Guide" with its vast trove of knowledge. For more casual observers "Nightwatch" is less in-depth but has star charts as well as many useful tips.

And as others have mentioned, viewing through several types of telescopes, at "star parties" and/or by using club loaner telescopes, will provide first-hand experience in choosing a telescope that will best satisfy one's needs. Some prefer slow motion controls instead of push-pull movements, some dislike the narrow views of long-focal length telescopes, some enjoy a correct-image magnified finder, and still others are very particular on eyepiece characteristics. Individuals who just want to better use their "department store" telescopes may learn from star party participants (such as adding a bottle of sand to a wobbly tripod, aligning the optics, or choosing eyepieces).

A warning ==> many of those first nights with a telescope will be consumed with setting up the equipment and searching rather than viewing; many evenings will seem non-productive. There are two solutions: observing along with someone experienced who can help out and answer questions, or preparing and practicing often, so that one gets familiar with both the overall skies and the telescope's features.

Ultimately, the wondrous sights of the skies will be revealed and enjoyed!

Jim K

Nota Bene: An 8-inch Schmidt Cassegrain, my first "real" telescope, has been used for several decades; now I have several, including a 14.5-inch f/4 reflector and a 4-inch f/10 refractor (for outreach). These telescopes have met *my* particular needs; others will have different considerations.



The opinions expressed herein are solely mine as a backyard astronomer. The information herein was assimilated from experience, discussions with others, and research of multiple sources generally available at the time of this writing. All reasonable care was used in addressing this topic, but no warranty is made as to accuracy, and liability cannot be accepted for errors or omissions. This article is for information only and is not intended, nor implied to be, a substitute for professional advice or formal instruction.