How to Start Right in Astronomy

Did you know you can see a galaxy 2½ million light-years away with your unaided eyes? Craters on the Moon with binoculars? Countless wonders await you any clear night. The first step is simply to look up and ask, "What's that?" When you do, you're taking the first step toward a lifetime of cosmic exploration and enjoyment.

But what, exactly, comes next? Too many newcomers to astronomy get lost in dead ends and quit in frustration. It shouldn't be that way.

What advice would help beginners the most? A while ago, the Sky & Telescope editors got together to brainstorm this question. Pooling thoughts from more than 100 years of collective experience answering the phones and mail, we came up with the following pointers to help newcomers past the most common pitfalls and onto the likeliest route to success.

Learn the sky with the unaided eye.

Astronomy is an outdoor nature hobby. Go out into the night and learn the starry names and patterns overhead. Use the monthly naked-eye star charts in Sky & Telescope, the hobby's essential monthly magazine. Or download our free Getting Started in Astronomy flyer (which only has bimonthly maps). Even if you live in a densely populated, light-polluted area, there's more to see up there than you might imagine.

Even if you go no further, the ability to look up and say, "There's Polaris" or "That's Saturn" will provide pleasure, and perhaps a sense of place in the cosmos, for the rest of your life.

Ransack your public library.

Astronomy is a learning hobby. Its joys come from intellectual discovery and knowledge of the cryptic night sky. But you have to make these discoveries, and gain this knowledge, by yourself. In other words, you need to become self-taught.

The public library is the beginner's most important astronomical tool. Comb the astronomy shelf for books about the basic knowledge you need to know, and for guidebooks to what you can see out there in the wide universe. Read about those stars and constellations you're finding with the

naked eye, and about how the stars change through the night and the seasons. If your library doesn't have enough, cruise your local bookstores (not to mention our own online store). And check the magazine racks for Sky & Telescope. It offers a big, user-friendly sky map each month, observing tips and projects for all skill levels, and reports on frontline astronomical research.

Of course the Web is a tremendous resource. But the Web is a hodgepodge. There are excellent beginner's sites (hey, you found this one!), but what you really need right now is a coherent, well-organized framework into which to put the knowledge that you will pick up as you go along. In other words, you need books. Go to the library.

Thinking telescope? Start with binoculars.

Binoculars make an ideal "first telescope" — for several reasons. They show you a wide field of view, making it easy to find your way around — whereas a higher-power telescope magnifies only a tiny, hard-to-locate bit of sky. Binoculars show a view that's right-side up and straight in front of you, making it easy to see where you're pointing. (An astronomical telescope's view, by contrast, is often upside down, is sometimes mirror-imaged as well, and is usually presented at right angles to the direction you're aiming.) Binoculars are also relatively cheap, widely available, and a breeze to carry and store.

And their performance is surprisingly respectable. Ordinary 7- to 10-power binoculars improve on the naked-eye view about as much as a good amateur telescope improves on the binoculars — for much less than half the price.

For astronomy, the larger the front lenses the better. High optical quality is also important, more so than for binoculars that are used on daytime scenes. Modern image-stabilized binoculars are a tremendous boon for astronomy (though expensive). But any binoculars that are already knocking around the back of your closet are enough to launch an amateur-astronomy career.

Dive into maps and guidebooks.

Once you have the binoculars, what do you do with them? You can have fun looking at the Moon and sweeping the star fields of the Milky Way, but that will wear thin pretty fast. However, if you've learned the constellations and obtained detailed sky maps, binoculars can keep you happily busy for years.

They'll reveal dozens of star clusters, galaxies, and nebulae. They'll show the ever-changing positions of Jupiter's moons and the crescent phases of Venus. You can identify dozens of craters, plains, and mountains on the Moon. You can split scores of interesting double stars and follow the fading and brightening of numerous variable stars if you know what to look for.

A sailor of the seas needs top-notch charts, and so does a sailor of the skies. Fine maps bring the fascination of hunting out faint secrets in hidden sky realms. Many guidebooks describe what's to be hunted and the nature of the objects you find. Moreover, the skills you'll develop using binoculars to locate these things are exactly the skills you'll need to put a telescope to good use.

Plan indoors what you'll do outdoors. Spread out your charts and guides on a big table, find things that ought to be in range of your equipment, and figure out how you'll get there. Plan your expeditions before heading out into the nightly wilderness.

Keep an astronomy diary.

This one is optional. But we notice that the people who get the most out of the hobby are often those who keep an observing logbook of what they do and see. Keeping a record concentrates the mind — even if it's just a jotting like "November 7th — out with the 10x50 binocs — clear windy night — NGC 457 in Cassiopeia a faint glow next to two brighter stars." Get a spiral-bound notebook and keep it with the rest of your observing gear. Being able to look back on your early experiences and sightings in years to come gives deeper meaning to your activities now.