

# Telescopes and Binoculars

A Selection Guide for Beginners by Lauren Herrington, the TieDyeAstronomer!

## What is the best telescope for a younger child interested in astronomy?

Orion FunScope Astro Dazzle 4.5" TableTop Telescope Kit – [www.telescope.com](http://www.telescope.com)

For \$100, you can get the telescope, everything needed to use it, and a moon map. For twenty dollars more (total of \$120) you can get all that plus a "planisphere" star chart and a book called "Exploring the Cosmos." This is a great starter pack that will give your child a taste of observing through a real telescope without breaking the bank. A convenient way to gauge astronomy interest and enthusiasm before proceeding further.

## What is the best telescope for an older child interested in astronomy?

Orion StarBlast 6 Astro Reflector Telescope – [www.telescope.com](http://www.telescope.com)

For \$300, you get the telescope and everything needed to use it. This is a good starter scope for an older child, and a good step up from the younger child's Astro Dazzle starter scope recommended above.

## What is an easy to carry, portable telescope for an adult?

Orion SkyQuest XT6 Classic Dobsonian Telescope – [www.telescope.com](http://www.telescope.com)

For \$250, you get the telescope and everything needed to use it. The aperture is big enough to allow great views of the moon and many planetary objects, and it's portable enough to set up in your back yard, or throw in the car on drives to darker skies. The XT6 is a great scope for people who are concerned about being able to lift and carry equipment on their own.

## What is the best starter telescope for a strong adult?

Orion SkyQuest XT8 Classic Dobsonian Telescope Kit – [www.telescope.com](http://www.telescope.com)

For \$400, you get the telescope and everything needed to use it, plus a "planisphere" star chart, the "Telescope Observer's Guide," a moon map, a "barlow" lens multiplier, and a red flashlight; that's everything an observer needs.

Note: The telescope is also available by itself for \$380, which is not a comparatively good deal, since you'll still need the accessories, which would cost more, in total, if purchased separately.

## What about binoculars?

Binoculars are great for observing in astronomy. They are easy to transport, set up, and use. 10x50s are best. 7x35s will work just fine, but you won't be able to see quite as much. Anything larger than 10x50s will be hard for kids to handle and will require special mounting. Recommendations for binoculars are as follows:

### Orion 10x50 Binocular Stargazing Kit – [www.telescope.com](http://www.telescope.com)

\$59.99 - The Orion 10x50 Binocular Stargazing Kit is good quality, and great value. It comes with a nice pair of 10x50 binoculars, a padded case, planisphere star chart, Binocular Astronomy Field Guide, and a red light flashlight (used instead of white light to preserve night vision while reading charts).

### Bushnell Falcon 10x50 Wide Angle Binoculars – [www.Amazon.com](http://www.Amazon.com)

\$35.11 - If you want something a bit cheaper, these Bushnell 10x50 Falcons would be good.

### Celestron UpClose G2 10x50 Porro Binocular – [www.Amazon.com](http://www.Amazon.com)

\$25.99 – And the absolute cheapest option I would recommend is Celestron UpClose 10x50 Porro Binocular.

# Telescopes & Binoculars for Beginners – General Notes

- **Don't get anything with an aperture of under 4"** because at that point binoculars will actually show you better views. Because of how telescopes work, they're forced to use high magnification, which means that some objects in the sky are so big there's no way you can look at them with a telescope. Therefore, most astronomers have a pair of binoculars in addition to their telescope because binoculars are often better for looking at the big objects like star clusters.
- **Don't get anything with an aperture of over 10"** because it will be too unwieldy. Whatever you get needs to be easy for you to set up in only a few minutes. A telescope that takes a long time to set up won't get used at the end of a long day. Keep in mind the physical bulk and not just the weight; a 12" telescope is as large as a human.
- Telescopes on a "**Dobsonian**" or "alt-azimuth" mount are the **absolute best for a beginner**. Telescopes with tracking require precise alignments, and are often frustrating to use. Choose a "Reflector" type of telescope instead of a "Refractor." **Reflector scopes give great views of planets and deep sky objects.**
- **Don't get a GoTo telescope as your first telescope.** The GoTo motors and computers drive up the cost of a telescope, and most importantly, GoTo prevents you from learning the sky. When you use a manual telescope, the locations of objects stick in your head. You'll learn the sky, how to "star hop," and where to find your favorite objects in no time. **Using a manual telescope is a great way to get kick-started in astronomy.**
- As far as brands go, Orion Telescopes tops my list because they make good quality telescopes and have good customer service. But any brand of Dobsonian with good reviews will work.
- **The absolute best thing you can do with binoculars is to put them on a tripod!!!!!!** You will see far, far more because the view will be steady, and not smeared around. I observe with 10x50s in my backyard all the time, and I can see at least 3x deeper when my binoculars are mounted compared to when I'm handholding them. I can see the Andromeda Galaxy and the Lagoon Nebula in binoculars from my backyard in the city of Houston, as well as many star clusters, but they all get much more difficult to see when I don't use a tripod!
- **Carefully consider the size and weight of the telescope you buy.** I can't overstate how important it is to avoid getting a telescope that's too big for the new astronomer to handle. Equipment is less likely to be used if it's too heavy, too cumbersome to transport, or too complicated to operate. Many telescopes end up in closets, garages, and yard sales because they were too heavy, or too intimidating to use. That's why the simpler telescopes marketed as "child" scopes could serve as a justifiable option for adults that are interested in astronomy and observing, but are understandably unsure about committing a lot of money to a new hobby until they've done some actual observing.
- The Houston Astronomical Society has a **telescope lending program** that allows members to borrow telescopes and binoculars. For more information about the telescope lending program and other member benefits go to [www.astronomyhouston.org/about](http://www.astronomyhouston.org/about)
- Whatever equipment you choose to start with, the Houston Astronomical Society is here to help you learn how to use it. Go to [www.astronomyhouston.org](http://www.astronomyhouston.org) and look at their calendar of upcoming events that include **telescope instruction events, star parties, and more!**