FOR BEGINNING ASTRONOMERS

*1) *A Good Attitude*

The Universe doesn't care what you paid for your telescope or what you think you are going to see. A telescope is a license to learn, and you will only get out of this hobby what you put into it. No computer will show you the sky — ultimately you will have to learn to find things yourself. It takes time and patience, but learning the sky is a big part of the fun, and seeing some object you found on your own can be very satisfying. Have realistic expectations. No small telescope will show you pictures like you see in magazines or turn stars into blazing suns. There are limitations to how faint and how small an object your telescope will show, and on how much magnification you can use. Learn what those limitations are. City lights put extreme limitations on what you can see. If you live in town, accept that or accept the fact that you will have to travel to get the most out of your telescope (and feel free to talk to local politicians about reducing light pollution!).

2) Good Sky References

Get a *planisphere star map for the latitude where you live (30° North in Lafayette). A planisphere consists of a couple of rotating disks that can be aligned to show the stars at the date and time of your choosing. They are much superior to maps in books and Internet sites, which are generally preset to a particular date and time and may not match the sky when you happen to be outside. Try to get a planisphere at least 8" in diameter. Inexpensive planisphere disks are better than more expensive planisphere cylinders.

There are many good brands of celestial software available for showing constellations and planets that are visible from your location. Planispheres are much cheaper and simpler, are lighter than a computer, withstand dew easily, and don't throw light around or stun your night vision with a monitor. On the other hand, sky software has many more features than a planisphere. A planisphere is an inexpensive, easy way for a beginner to start learning sky geography, and some might consider sky software to be a good step up from that when you are ready.

*Turn Left at Orion, by Consolmagno and Davis, is one of the best telescope books for beginners. It has almost a hundred night sky objects for beginners with small telescopes, complete with maps and drawings.

As a next step up, consider the Norton's Star Atlas 2000.0, by Ridpath. It is filled with solid information about observing, but is most famous for its excellent star maps and lists of interesting things to observe. You need to have a little experience to use it effectively, though.

Then there's the three volume Burnham's Celestial Handbook, by Robert Burnham, Jr. This has background information on the nature, distance, and size of nearly any object you are likely to see through your telescope.

3) Hardware

You absolutely must have a *red flashlight for reading your references, identifying eyepieces, and so on. A red light will preserve your night vision. Any dim to medium bright flashlight will do. The flashlight shouldn't be bright — just bright enough to allow you to read. Its light should be as deep red as possible, not pink or orange (small flashlights using red LEDs are best). With regular flashlights, paint the lamp or simply cover it with red plastic (several layers if necessary). Having a small red flashlight that you can hang it around your neck on a string works well — at least you'll always know where it is!

A *white light flashlight is important for checking for ant hills or other undesirables before setting up, and for checking the site as you leave to be sure you didn't leave anything behind. Never turn it on while observing, or you'll ruin your night vision.

Don't forget to have *spare batteries and lamps for the flashlights.

You'll need a *really good bug spray. Trust me. Carry a small bottle of water for rinsing your hands after using it, though, as some of the stuff will damage any plastic on your telescope.

A hair drier or dew zapper is necessary for getting rid of dew on damp nights if you observe for more than about a half hour. Don't put the heat source so close to the optics that they crack! If you do only backyard observing, your heater can use house current, but if you are far from electricity it may need to run off your car battery. Be sure you have the correct connections — and a healthy battery!

A small can of compressed air, available from photo shops, will help keep your optics clean. More complicated cleaning should be done only by people who know what they are doing.

You may need extra eyepieces and/or a Barlow lens, depending on how well equipped your instrument is. New eyepieces will help most department store telescopes, but get eyepieces in the right diameter with suitable magnifications. Get a case to hold them.

Binoculars are handy for initially locating fairly bright objects. This can help you point your telescope finder more easily. Some star clusters simply look better in binoculars than in a telescope.

A small, portable camp table for your equipment and references can be very handy, as can a portable camp chair. If you expect to maintain a logbook of what you see, bring a piece of plastic to cover the paper from dew. Have some method of keeping wind from blowing stuff off the table. Pencils write better on damp paper than pens do. Bring spares.

**anything marked with an asterisk and italics is absolutely essential!*