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***Stargazing For Beginners***

*How To Know The Night Sky*

*As Well As You Know The Streets of Your Own Home Town*

# **Home Astronomy for Beginners**

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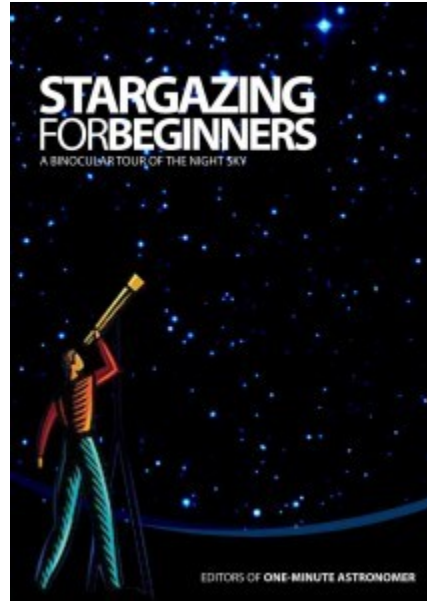
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## **Telescopes and Light**

### How Telescopes and Light Work Together

As a little child, you might have often looked at the nighttime sky and were amazed at the stars, moon, and maybe some of the other celestial bodies that you encountered. Truly, stars are a wonder to behold. There are billions of stars in our galaxy alone, which explains why the star-filled sky is so vast during the nighttime.

This interest, common during childhood, has led many people into becoming astronomers, studying the stars and other heavenly bodies of the universe throughout their lives. It is their way of making a living, and perhaps more appropriately, it is their way of life.

However, thanks to the availability of modern science and technology, anyone can be an amateur astronomer at home, and do some of the things that are commonly done by professional astronomers.

One of the easiest methods is stargazing, while using a powerful telescope in order to make the stars look bigger and "more alive". A telescope is the name of an instrument that is designed to view distant

objects.

Even if the most powerful ones are in different observatories around the world, you can get a relatively powerful one in order to place it at your home and do your astronomy hobby from home.

How does a telescope magnify a remote object in order to view it at a better position? How do telescopes increase the size of these remote objects and make them look better, even brighter?

This is because a telescope collects as much light as it can, hence the moniker "light bucket", referring to the telescope. As it does that, it focuses the light in order to get a clearer picture. The higher the focus of the telescope, then the higher the resolution of the entire picture.

The telescope being referred to, as well as the most common one and the one that is most appropriate for home use, is known as the optical telescope. This is the one that gathers and focuses light, as opposed to other types of telescopes, such as radio telescopes, x-ray telescopes, and gamma-ray telescopes. These other, less common types of telescopes are mainly used by scientists and professional astronomers who want different views of outer space and its heavenly bodies for

deeper study.

Owning an optical telescope for home astronomy use isn't that difficult. You can purchase a small one (small compared to the ones in observatories) from several noted dealers and manufacturers. In contrast, it's very difficult to obtain one of those specialized types of telescope since they are mostly made for and sold to observatories and astronomy stations only, and not to the general public. However, optical telescopes are very useful for home hobby use.

Before purchasing one optical telescope, know that there are normally three types of optical telescopes – the refracting, reflecting, and catadioptric telescopes. Simply put, the refracting telescope uses lens, the reflecting telescope uses mirrors, and the catadioptric uses a combination of the two. There are various characteristics that are unique to each type, which means that it is important to ask the recommendation of the dealer or manufacturer before making a purchase.

Refracting telescopes were the first known kind of optical telescopes that were invented, followed by the idea of reflector telescopes, then the catadioptric ones. A common problem of refracting telescopes

usually deals with large apertures, of which the reflecting kind is better suited for. If you prefer smaller apertures, then the refracting telescope might be the better option for you.

Telescopes and light go hand in hand. Optical telescopes are useless without light, for it is light that they actually measure. Without light, the optical telescopes won't be able to distinguish the different heavenly bodies you wish to see, including the stars. Light is the very thing that telescopes of this kind use in order to serve their purpose.

That said, home astronomy can be a wonderful thing, particularly with the use of a well researched modern telescope.

## **Exploring the Stars**

Exploring the Stars

Every moment of every day, we are surrounded by greatness evidenced by simply looking upwards. The vastness of the night sky is very deceiving, since our frame of reference is limited by our line of sight.



For centuries mankind continues to be fascinated by the stars. Groups of stars that form a particular shape, known as constellations, have been given names, such as the Big Dipper and the Little Dipper. Scientists have often said that there are billions of stars in our galaxy alone, which is just one of many galaxies in the universe.

A star is a huge ball of plasma that shines brightly. We all know what the sun is, but do we actually know that it is a star? The sun, as we know it, is very powerful and is the Earth's source of energy. That alone gives us an idea as to how powerful a star can be, whether it is in terms of heat or of light. Stars are wonderful to look at, even from our vantage point of millions of miles of distance.

Some people flock to public observatories or astronomy stations in order to view stars for a small fee. Even if they seem to be unmoving, some people just can't get enough satisfaction merely looking at them through powerful telescopes. Astronomers continue to study the stars in the hope of discovering new facts about our place in the universe as well as our neighbors.

As a hobbyist you don't necessarily need powerful telescopes in order to enjoy the stars but there are telescopes that are excellent for

stargazing by the layperson and greatly enhance the experience instead of just depending on the naked eye.

Stargazing is a very popular activity and is sometimes required study by astronomy professors

Astronomers explore the stars in order to learn about them, for that is their job and means of livelihood. This research that astronomers conduct thoroughly and systematically regarding stars are actually very helpful as pieces of knowledge for the common man. Without them, we will have a very limited knowledge regarding stars and perhaps other heavenly bodies. But certainly, stars are also in the heavens above for the common person to enjoy.

Exploring the stars via stargazing or even with a home astronomy kit at home (usually composed of a less powerful telescope than that at an observatory) can help you enjoy them and think about them, without the need for deeper knowledge that astronomers seek. In other words, enjoy stargazing and exploring the visible stars and be relaxed while doing so. It is wonderful to view them, especially from different angles and times, of which some groups of stars can come together to form a constellation.

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