

# Choosing a Telescope

**Refractor:** Telescope has a glass lens at the front of the tube and you look through the back end. These give a very good sharp image of planets and double stars.

**Reflector:** Telescope uses a mirror to throw light back to the front end and out the side of the tube. These are great for collecting faint light from distant objects like star clusters and galaxies. You'll want the large aperture (size) scope that you can carry and fit in your car easily, so don't forget portability and convenience. Size for size reflectors are less expensive than refractors. The telescope shouldn't be so heavy that you can't move it outdoors, set it up, and take it down reasonably easily. Size is not everything; a good small refractor will give you clear bright images of hundreds of stars, clusters, nebulae and other things. The best one for you will depend on what you want to see and study. Can't afford it? Save up until you can. It's foolish to blow money on something you will be disappointed with later on.

**Schmidt-Cassegrain:** These use a spherical primary mirror to focus incoming light onto a convex secondary mirror which sends the light back through a hole in the primary mirror to the eyepiece, located at the rear of the telescope. Spherical mirrors are less expensive to make than parabolic mirrors but introduce spherical aberration. By using a corrector plate at the front of the telescope, spherical aberration is corrected.

## What you will see:

*Moon in great detail:* Huge craters, craggy walls, flooded plains and wrinkles in the surface.

*Solar system planets:* It is fairly easy to see the rings of Saturn, the four bigger moons and cloud bands of Jupiter, and as you get better at observing, the surface markings on Mars and the colours of Venus, Neptune and Uranus.

*Stars:* You will see light from groups of stars like fuzzy balls, chains of coloured beads, clouds where stars are being born, and you will look back across light years of time. You will never see the surface of another star. They are too far away!

**Where will I start looking?** Start by watching the movement of the planets, the surface and phases of the Moon, the passing of bright stars each month. Find and name the five brightest stars in the sky. Be able to find the South Celestial Pole. Identify some craters on the Moon. These are things you can do with no great experience or equipment at all.

**Helpful Aids:** To start watching you need to know when and where to look.

The local astronomical guide book Astronomy 2008 may be bought from MAS, or from book stores that stock sky watching publications, (Angus & Robertson, Dymocks, etc), approx \$20. A Star Wheel is a simple guide to the rise and set of constellations throughout the year.

**Be patient & relax:** There's nothing you can do if the clouds block your view, or if you miss the event you really wanted. The universe will not bend to your wishes. Amateur astronomy should be fun, take a deep breath and take it only as fast or as slow, as intense or as easy, as is right for you.