

Choosing a Telescope - Part 3

Catadioptric Telescopes Continued

The Schmidt Cassegrain is the most popular type. The Maksutov is a variation with a differently shaped corrector. The 'Mak' offers excellent image quality:- refractor like, although the thick corrector can cause thermal stability problems. In the past, these have been expensive but now Meade and Russian- built versions have lowered the price greatly.

The catadioptric's drawbacks? First, the cost. An " Schmidt-Cassegrain costs 50% to 300% more than an " reflector, although about the same as a good " achromatic refractor. Schmidt-Cassegrain catadioptrics do not have as wide a contrast range on the Moon and planets as a refractor or most f/6 to f/8 Newtonian reflectors, because of the extra light scattered by its larger secondary mirror and its multiple-element folded light path, nor will it be able to split close binary stars as cleanly. However, a Schmidt-Cassegrain will usually outperform a fast (f/4.5) focal ratio reflector of similar aperture on the planets and binary stars due to its lack of diffraction-causing secondary mirror spider vanes.

Although their large apertures allow detailed deep space observing, catadioptrics generally do not have as bright an image as other scope types of similar aperture at the same power. Also the focussing is done by moving the primary mirror which can cause annoying image shift during focussing.

Typical 152mm (6") apochromatic refractor 200mm (8") Schmidt-Cassegrain reflector Finally, because of their eyepiece location at the bottom of the optical tube, catadioptrics on German Equatorial mounts are somewhat less comfortable to use than reflectors on similar mounts - when observing at the zenith, catadioptric eyepiece will typically be at waist level, moving to normal eye level only when the scopes are pointed towards the horizon. The eyepieces of fork-mounted catadioptrics are always at more or less eye level, no matter where the scopes are pointed, and are therefore more accommodating for visual observing.

Despite these drawbacks, if it fits your budget and you need a portable scope that does it all, you would be hard-pressed to find a better all-around investment than a good catadioptric.

Manufacturers: [Meade](#), [Celestron](#), Orion Optics, [Vixen](#), [Takahashi](#).

What would you recommend?

Below, please find some personal recommendations, reflecting my own deep seated and, quite possibly irrational, prejudices!

Portable 6-8 inch Meade/Celestron/Darkstar Dobsonian...Digital Setting Circle compatible, simple and relatively cheap.

4 inch Vixen achromatic refractor on GP equatorial mount...nice optics and excellent mount.

Celestron Nexstar 5 or Meade ETX 125 - GOTO capability and nice optics in a highly portable package.

8-inch Meade LX / Celestron. Catadioptric telescopes from the Industry giants. Great if you can set it up on your own. Try a 'dead lift' of the tube and fork onto the tripod at 2.30 am before committing to this scope.

Summary Analyse your lifestyle first. Minimise the set-up. Don't buy in a camera shop / cata-logue shop:- buy from a dedicated telescope shop. Spend as much as you can. Ignore accessory bundles. Note the resale value. Don't overspend. Make sure you can find objects, consider Digital Setting Circles or GOTO if you can't. Avoid 'aperture fever'. Telescopes are heavy. Watch your back. Don't buy a 60mm refractor or a 4 inch reflector..... Like I did! Forget astrophotography... for now. Resources The best up to date information is on the Internet, via the Web or newsgroups on USENET. Internet:

<http://www.scopereviews.com>

<http://www.cloudynights.com>

<http://www.weatherman.com>

<http://www.astronomics.com> [sci.astro.amateur](#) on USENET. Suggested Reading

[Star Ware: The Amateur Astronomer's Guide to Choosing, Buying, and Using Telescopes and Accessories, 3rd Edition](#)

[Star Ware: The Amateur Astronomer's Guide to Choosing, Buying, and Using Telescopes and Accessories, Third Edition \(eBook\)](#)

[Choosing and Using a Schmidt-Cassegrain Telescope: A Guide to Commercial Scts and Maksutovs](#)

[The 20-Cm Schmidt-Cassegrain Telescope: A Practical Observing Guide](#)

[Star Watch: The Amateur Astronomer's Guide to Finding, Observing, and Learning About over 125 Celestial Objects](#)

[Turn Left at Orion: A Hundred Night Sky Objects to See in a Small Telescope - and How to Find Them](#)

About the Author

I've been interested in astronomy for many years now and have acquired a couple of telescopes (refractors) that I use regularly to patrol the skies.

Source: <http://www.nightskyobserver.com>