

Thinking of buying a telescope for Christmas?

It's the time of year when many are considering buying a telescope as a holiday gift – a decision many face with many questions – and given the options available, it's no wonder. While we don't have space for Telescope Buying 101, we can offer some help in making the decision easier.

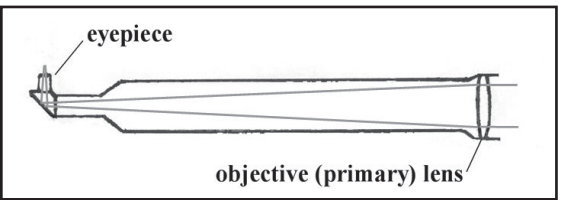
Cost. Prices range from less than \$100 to thousands of dollars. The least-expensive are usually more disappointing than satisfying as they are often wobbly and finding objects can be challenging. At the other end, few can afford the big scopes, or figure out how to use them if they do. But two to four hundred dollars, spent wisely, can purchase a fun and satisfying scope.

Binoculars. If you're not ready to spend that much for a scope, \$100 or so can purchase a respectable pair of binoculars – 7x50s being a good size for stargazing as well as general viewing. Virtually all stargazers, even those with large scopes, use them. If you've never viewed the night sky with binoculars, you'll be surprised at how much more can be seen than with naked eyes.

Power. The magnifying power of a telescope is not fixed but rather depends upon the eyepiece, the part of the scope into which one actually views and which does the magnifying. Eyepieces (and thus power) can be switched out easily and quickly in the field. Most new scopes come with two or three different sizes of eyepieces producing different powers, and other sizes can be purchased later if more options (powers) are desired.

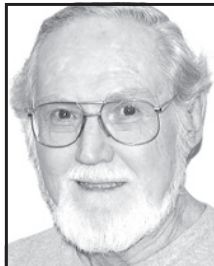
Aperture. A more relevant consideration than power is a telescope's aperture – the diameter of the "big end" – and generally bigger is better. The larger the aperture, the more light a scope gathers, and since seeing light from faint objects is what it's all about, larger apertures make objects look brighter, and can reveal objects too faint to be seen in smaller aperture scopes. Also, larger aperture scopes can generally be "pushed" to higher powers before the image becomes too fuzzy.

Types. The three basic types of telescopes are refractors, reflectors, and Cassegrains. Refractors, the first type of telescope invented in 1608 by Hans Lippershey, have an objective lens at the front end to gather light and focus it on the eyepiece at the back end.



Refractor Telescope

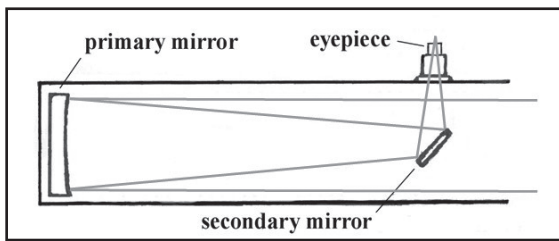
In 1668, Isaac Newton invented reflecting telescopes, now called Newtonian reflectors. The objective lens at the front is replaced by a concave mirror at the back end which gathers and focus the light to the eyepiece. (A small interior diagonal mirror re-



Paul Derrick

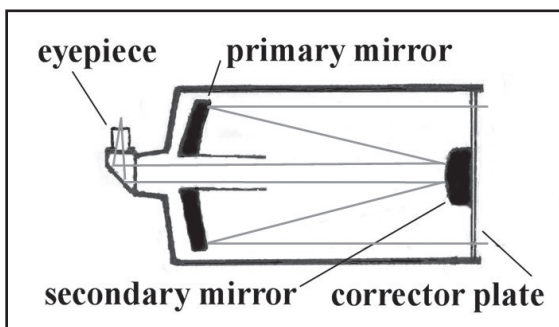
● Stargazer

directs the light 90 degrees to the eyepiece placed at the side rather than at the back end.) Since mirrors are less expensive to make than lens, reflectors of a given aperture cost less than refractors of the same size. For example, a 6" reflector will generally cost much less than a 6" refractor.



Reflector Telescope

The Cassegrain, designed by Laurent Cassegrain in 1672, is a variation of Newton's reflector. Both have a light-gathering concave mirror at the back, but in the Cassegrain the light is focused onto small convex mirror at the front end which re-directs the light back down the tube, through a small hole in the big mirror, and into the eyepiece at the scope's back end. Advantages of Cassegrains are their compactness and ease of portability, but with their more complex design they cost more than reflectors.



Cassegrain Telescope

Mounts. Telescopes are attached on a mount which holds them and enables them to be pointed at objects. The three primary kinds of mounts are equatorial, fork, and altazimuth. Most, but not all, mounts are affixed atop a tripod stand. With mounts and tripods, sturdier is better.

A creative non-tripod altazimuth mount, invented in the 1960s by American amateur astronomer John Dobson, is by far the simplest and least-expensive. The rotating and pivoting base holding a Newtonian



Dobsonian Telescope

reflector scope (informally called a Dobsonian telescope, or simply a Dob) is, dollar for dollar, hard to beat.

GoTo Electronics. An increasing number of scopes have electronic "GoTo" and tracking capabilities. The GoTo feature finds objects while tracking gradually moves the scope at the same rate but in the opposite direction of Earth's rotation to keep the object visible in the eyepiece. These can be marvelous aids, but they increase a scope's cost and are rarely as simple to use as the advertising claims.

Using. When you get a new scope, don't expect to set it up and immediately start using it like an expert. Telescopes have a learning curve, and some pointers from an experienced stargazer can greatly help jump-start your learning. Since amateur astronomers often hang out together and are usually eager to help "newbies" get started, search the Internet for "astronomy clubs" to find one near you.

If you have an opportunity, attend a public star party where amateur astronomers are likely to have a variety of types and sizes of scopes set up. They

won't mind answering questions about their scope, and asking "How much did it cost?" is not considered impolite.

While there are several reputable brands of telescopes, Celestron and Meade being two of the most popular, anyone contemplating buying a scope might wish to request an Orion Telescope catalog – online at www.OrionTelescopes.com or by calling (800) 676-1343. While I'm not recommending Orion or any other brand of scope – mine happens to be a Celestron – Orion's catalog gives a good idea of the wide array of telescopes, binoculars, and spotting scopes available – types, sizes, prices, and accessories.

Paul Derrick is an amateur astronomer who lives in Waco, Texas. His website (www.stargazerpaul.com) contains an archive of past Stargazer columns and other basic stargazing information. Contact him at paulderrickwaco@aol.com or (254) 723-6346 or write 918 N. 30th St., Waco, Texas, 76707.

Department of Transportation's record system wins award

The Kansas Department of Transportation's automated digital Kansas Traffic Records System has received a prestigious InformationWeek 500 award. The award is attached to an annual ranking published by InformationWeek magazine that recognizes market-leading innovation in business technology.

InformationWeek recognized the department for the agency's ongoing digital

upgrade of the state's traffic records system, which in the past relied on manually entered data from paper crash reports submitted by law enforcement agencies. The system was subject to delays that created lag times of up to a year between the date of a crash and its entry into the state's digital records system.

Under the new system launched last year, law enforcement personnel submit

electronic crash reports directly into the system, where they are verified by special data-validation software and automatically indexed for later retrieval and analysis. A PDF of the original report is created and stored at the same time. The system is shared by the department, the Kansas Highway Patrol, the Kansas Bureau of Investigation and other state agencies.

"In addition to labor-related savings,

the expedited process has implications for public safety," the editors wrote in the Sept. 19 edition of InformationWeek. "For example, the Department of Transportation can use the crash repository in its evaluations of road repairs and upgrades."

Future plans include incorporating drunk driving data and emergency and trauma-care data into the system with the

goal of creating an immediately accessible "one-stop shop" providing crash data to law enforcement personnel and other appropriate state agencies.

InformationWeek serves 400,000 subscribers and has an average of 1.8 million monthly visitors at InformationWeek.com. The magazine has published the InformationWeek 500 for 23 years.

BUSINESS DIRECTORY

See what the business directory can do for you!

To have your ad placed in the Business Directory call Sharon or Kathryn today at **462-3963**

NEW SYSTEM

PROFESSIONAL WINDOW CLEANING

(800) 611-6735

www.MyWindowCleaner.net
Serving Colby since 1992!

Commercial • Residential • Free Estimates

ROOFMASTERS

Serving Colby for over 30 YEARS!

425 East Hill, Colby, KS
RESIDENTIAL 785-462-6642
 Heritage Shingles
 Wood Shingles
 IR Shingles
 Stone Coated Steel
 Metal Panels
COMMERCIAL
 EPDM Rubber
 White TPO Single Ply
 Modified Systems
 Built up Systems
 Elastomeric Coating
 Licensed
 Bonded
 Insured
FREE ESTIMATES
WHO YA GONNA CALL?

THOMAS
 County INSURANCE AGENCY
 Serving NW Kansas for over 100 years.

Representing many companies to provide all your insurance needs:

- Home, Auto, Boat, Motorcycle, RV
- Farm and Crop Insurance
- Commercial Property, Automobiles
- General Liability, Workers Compensation
- Inland Marine, Builders Risk
- Auto Service Shops
- Body Shop and Collision Repair
- Contractors
- Restaurants
- Salons and Day Spas
- Strip Malls, Condominiums
- Churches, Schools, Day Care Centers

* For great coverage and customer service contact me!



Dennis R. Tubbs/Agent

P.O. Box 506 • 490 N. Franklin
 Ph: 785-462-3939 • Fax: 785-462-3752

dtubbs@thomascountyins.com • www.thomascountyins.com

Dr. Tom Barlow
DENTIST

785-460-7538

Appointments
 Readily Available

505 H N. Franklin, Colby

NEED EXTRA MONEY?

Be a Newspaper Carrier!

Call us or stop by!

COLBY FREE PRESS
 155 W. 5th Street • 785.462.3963

Meadow Lake Restaurant & Lounge

Monday Nights \$1 Draws

Saturday Nights Prime Rib

MEADOW LAKE
 GOLF COURSE & RESTAURANT

785-460-6443
 1085 E Golf Club Rd. • Colby, KS



David Browne III
 550 N. Franklin
 Colby, KS
 (785) 462-3388

I make insurance simple.



FARM BUREAU FINANCIAL SERVICES