or set them up at a site. Dream-scopes have an advantage over the real thing: They can never contribute to a hernia.

**StarStructure basics**

I enjoyed being the focus of my friends’ envy when I had the opportunity to field-test StarStructure Telescopes’ 12½-inch f/4.8 Dobsonian-mounted, truss-tube reflecting telescope. Priced at $3,295, the basic model comes with a custom-fit light shroud, a JMI DX-3 focuser, and a Rigel QuikFinder. The telescope arrived in a sturdy wooden crate packed with fitted Styrofoam that prevented jostling during shipping. The telescope came in eight pieces, the smallest of which were the four trusses. Bolts and other small parts were packed together in a box.

The StarStructure scope is surprisingly light — far lighter than typical Dobsonian-mounted ones of equal aperture. It is made entirely of aluminum, except, of course, the optics. Completely assembled, this 12½-inch telescope weighs a meager 76 pounds. The heaviest component is the mirror box with the mirror installed, and it is an easily manageable 45 pounds.

The StarStructure 12½-inch is light enough that almost anyone can assemble it. An enclosed-tube Dobsonian telescope with a similar-size mirror is typically about 20 pounds heavier, with the heaviest component weighing about 55 pounds.

Aluminum construction also helps decrease the time needed for the mirror to cool to ambient temperature compared with traditional truss-tube designs. The overall fabrication is of high quality, and the light, easy-to-manage components fit into the trunk of my small sedan; the mirror box rides in the back seat.

The StarStructure is a real eye-catcher. Its blue and black-and-white paint scheme stands out in a crowd. With the light-shroud off, the scope reveals high-tech architecture. Metal lines and angles meld science and art into a beautiful and useful scientific tool. I received many compliments from people at star parties and public observing sessions on the StarStructure’s visual appeal.

**Snappy setup**

Following the written instructions to the letter, I completed initial setup of the telescope in less than 15 minutes. Collimation took less than 5 minutes, so I was ready to observe — delayed only by the Sun — in about 20 minutes.

Every setup after the first took less than 15 minutes — including collimation — in...
STARSTRUCTURE TELESCOPES’ 12½-INCH Dobsonian-mounted reflector is lightweight for its size.
FOUR COLLAPSIBLE TRUSSES separate the secondary assembly from the mirror box. Each truss’s position is marked, and each is slotted for easy installation.

part because I left the mirror cell in its box, and also because collimation is made easy by the scope’s design. The three collimation knobs are large and easy to manipulate, even in the dark wearing thick gloves.

Part of what makes this scope so easy to set up is the truss system: four one-piece, collapsible trusses, which look like inverted Vs when assembled. Each is marked, so you know if it’s an altitude, top, or bottom truss. Each truss bottom is slotted on its inner side to mate to a pair of wing nuts on the mirror box. The top of each truss also is slotted to receive one of the wing nuts on the front end.

The mirror cell has two posts, which mate to holes in the mirror box, so you can insert the mirror cell correctly every time. Because of the telescope’s near-perfect balance, it’s a good idea to lean the front end of the scope against your observing stool while you set the mirror cell in the mirror box. This ensures the scope will not move when you put the rear bolts into place.

Because of the mirror’s size, I expected the telescope’s cool-down period to last an hour longer than it did. When the mirror stabilized, I was able to do what I had wanted to do since the box first arrived at my house: observe.

The real test — the sky

I began with Jupiter. Through the StarStructure 12½-inch, the Great Red Spot (GRS) was well defined and had a pale pink color. The GRS actually looked like a giant hurricane instead of a nondescript pinkish oval. Jupiter’s northern and southern equatorial bands usually look like muddy stripes when viewed through the smaller scopes I typically use, but through the StarStructure, I could detect small formations and structures within the bands.

On March 27, 2004, I observed the triple transit of the shadows of Io, Ganymede, and Callisto across the giant planet. The three shadows were sharp and easily detected, as were the disks of Io and Ganymede.

Next, I turned the StarStructure toward Saturn, my favorite planet. I could distinguish Saturn’s A, B, and C rings clearly. The Cassini Division was a sharp, dark separation between the A and B rings. The shadow of the planet across the rings was sharp.
I lingered on Saturn for quite a while before changing targets.

One of my fellow astronomers not stricken with envy let me borrow his hydrogen-beta filter, and I was on the hunt for the Horsehead Nebula (B33) in Orion. Because B33 is one of my favorite objects, I’ve viewed it through a number of amateur scopes. The StarStructure’s view was superior to most and equal to the best.

The Orion Nebula (M42) was spectacular through this telescope. The wispy nebulosity was clear and had depth to it. Using a 7mm eyepiece, which provided a magnification of 218x, I was able to pick out the E and F stars in the Trapezium clearly.

The face-on spiral galaxy M101 in Ursa Major revealed fine spiral arms with clear divisions between them. Using this scope, it seemed that nothing looked like a non-descript, fuzzy blob. The great globular cluster M13 in Hercules, for instance, was a tight group of pinpricks instead of a bright, indistinct patch of light.

What I really think

The StarStructure 12½-inch has many advantages, but the biggest is its weight.

My wife, who is small of frame, had absolutely no problem setting up the telescope alone. She has never been able to set up a solid-tube Dobsonian of equal aperture because of the tube’s weight and awkwardness.

Lastly, this scope is durable. When several teachers invited me to bring the StarStructure 12½-inch to an observing session for an elementary school, I knew the students couldn’t damage the scope because it’s fabricated from aircraft-grade aluminum.

I found the StarStructure to be a well-designed, versatile, and easy-to-operate telescope. However, I did encounter two minor difficulties. The Rigel QuikFinder single-power finder was adequate, but not the model or design I would have chosen to pair with such a high-end product. Many people like the QuikFinder, but I prefer either the Telrad finder, which is packaged with other scopes manufactured by StarStructure, or a 9x50 finder scope. The telescope seemed a little bottom heavy, but when I installed a borrowed Telrad, the balance problem no longer existed.

So, if you’re looking for that perfect — but elusive — combination of large aperture and portability, the StarStructure 12½-inch may be your best choice.

THE SECONDARY ASSEMBLY (sometimes called the cage) contains the secondary mirror and its four support vanes. The focuser and any finder scope also attach to the cage.

THE BASE of any Dobsonian reflector must be stable or else observing will be difficult (if not impossible). The StarStructure Telescopes’ foundation is sturdy and of high quality.

THE PRIMARY MIRROR supports the secondary mirror. It is a 1 2 1/2-inch Newtonian reflector.
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