Choose the dome that’s right for you

There’s a saying in astronomy: The best telescope is the one you use. If your telescope is too big or too complicated to set up easily, you might find it collecting dust instead of starlight. So, many amateur astronomers have looked to mimic the “big boys” over the years and put their telescopes in a more permanent installation — an observatory.

Building a backyard observatory 25 years ago usually meant one of two things: Buy a dome or do it yourself from scratch. A simple “roll-off roof” observatory was also an alternative. But the allure of a dome still beckons many amateurs.

Both types have advantages. A dome provides better wind and light protection, yet it traps daytime heat. The roll-off roof allows rapid climatic adjustment, but less light and wind protection than a dome.

Domes in the average amateur’s price range became more available in recent years. Three of these newcomers offer different approaches to housing your scope.

AstroGazer

The AstroGazer is a portable dome that offers excellent features. The dome comes in three bags. The 10-foot-wide, 8-foot-high AstroGazer sets up easily. Assembly required no tools and took me an hour.

The frame is aluminum, stainless steel, and PVC. It assembles much like a tent, except there are more “poles” and the top of this tent rotates 360°. Nylon connectors fasten the frame parts. Easy-to-use levelers allow setup on most uneven surfaces.

The dome and cylinder covering are heat-sealed durable vinyl, thus waterproof. The covering easily attaches to the framework with Velcro and grommets.

The AstroGazer dome rotates smoothly and is quiet (important for those with easily disturbed neighbors). The dome slit opens wide and provides an excellent view from the horizon to past overhead. I liked being able to open large dome sections to stabilize the temperature quickly.

AstroGizmos also has a planetarium conversion kit, which allows a user to turn the dome’s interior into a planetarium. Many schools, museums, and science centers, and even some astronomy clubs, could benefit from this. Here’s the opportunity to

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give a planetarium star lecture and then open up the dome for the real show.

**Explora-Dome**

Explora-Dome grew out of Polytank, a business that manufactures farm equipment. Explora-Dome has lots of options. You can purchase only the dome, support ring, roof panels, wheel hardware, rotation motors, cylinder base, or the complete kit.

PolyTank molds Explora-Dome as a one-piece unit out of strong, UV-stabilized polyethylene. The dome features an over-the-top door and a lower fold-out door. The dome’s outside base measures 97 inches (2.5 meters) across. It’s 54 inches (1.4m) tall to the dome skirt, and the slit opens 29 inches (0.7m) wide. The slit opening continues 10 inches (0.25m) beyond the zenith, providing a good view. The slit opens with a rope-and-pulley system.

For this article, members from the Northeast Florida Astronomical Society and I built a 10 foot by 10 foot building framework. Explora-Dome supplies extensive framework construction drawings. The base building measures approximately 4 feet tall (1.2m). We used 2x4 lumber to build each wall’s framework.

The roof support, made from 2x6s and 2x10s, ties the wall frame and dome ring together and supports the four roof panels and the dome. The roof support requires angled cuts, so some carpentry skill comes in handy. The dome ring made the assembly easier, but instructions also show you how to build your own out of wood.

The dome wheels connect to the dome ring, and a wheel channel attaches to the dome. Make certain you have plenty of people to heft the Explora-Dome into place. Although it weighs only 180 pounds (82 kg), it’s awkward to lift. Once we aligned the wheels in the wheel channel, the dome operated smoothly.

**SkyShed POD**

You may have seen injection-molded containers. They are durable, rustproof, and easy to assemble. It’s on this principle that Wayne Parker designed the SkyShed POD.

Parker was making a name for himself with his SkyShed products, from piers to sliding-roof observatories, when the idea for the SkyShed POD surfaced. The POD assembles from 10 panels. The panels — six for the base and four for the dome — are high-density, UV-resistant, double-wall polyethylene. Each panel weighs between 27 and 50 pounds (12.3 and 22.7 kg). The unit features stainless steel hardware, an advantage for those in moist locations.

The POD measures 7 feet (2.1m) wide and 7 feet tall. The dome is a clamshell type — when opened, half of the dome swivels into the other half. This allows the observer to see 50 percent of the sky at a time. A clamshell dome also allows for rapid temperature adjustment, much like a roll-off roof does. So you get some wind and light protection and better acclimatization.

Numerous POD options are available, from a variety of base and dome colors to POD bays for storage and work space. You can choose one to five POD bays; the sixth base cylinder panel is the door panel. For our test and review I chose three POD bays and the Desert Tan color.

The POD arrived in four big, easy-to-unpack boxes. An assembly DVD accompanied written directions. Northeast Florida Astronomical Society members and I set up a laptop computer while assembling the POD.

Assembly was easy. The hardest task was assuring we had installed the weather stripping correctly, using silicone caulk for the seams. You can anchor the POD to a deck or open ground. Two internal anchor points attach to each base segment. The dome has two internal locking knobs, and the door also has a lock.

Using the POD was easy. Use caution when opening and closing the inner dome until you get used to its operation. The dome easily rotates by hand on 30 wheels located in the base segments.

**Dome sweet dome?**

Many amateur astronomers say one of the best hobby-related things they ever have done was build an observatory. If you choose not to build from scratch, one of these three ready-made domes could soon house your telescope.
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