

## **A letter to the SkyShed POD Yahoo Discussion Group**

This forum provided valuable answers as I obsessed over personal observatory options last year and, subsequently, over which POD configuration would best serve my home-observatory needs. I'm indebted to all who share their experiences and insights here. This is among the most dynamic company-sponsored forums on the web and, although you'll likely find little below that hasn't already been covered far more meaningfully in earlier threads, I'll try to return the favor and hope the following will be of help to some.

### **A Grain of Salt**

In the interest of disclosure, please know that I've a number of friends and acquaintances in this industry, including more than one involved in the manufacture and distribution of observatories. I count Wayne and Lorelei among my closest friends and admire their accomplishments. In an industry that often measures success as product sales in the hundreds, their achievements are truly phenomenal. You could label me a fan of SkyShed and its products and not be wrong, although it would be more accurate to consider me a fan of astronomy products in general. There are a number of observatory producers and products that I admire and frequently recommend, but this note attempts only to explain how and why I ended up selecting a POD for use at my home and to report my limited experience with it to date. This is not an independent review, I am not unbiased, and trust you'll bear both in mind if you read on.

### **Why a POD?**

I approached selection of a personal observatory from the view that using any of the excellent options the market now offers is, for me, a necessary evil. In a perfect world, there would be no need to enclose my scope. I'd live at a latitude that receives no more than eight hours of sunlight per 24-hour day. Skies would always be crystal clear and dead steady, temperatures would never vary from a dry 70°F, and it would not rain – ever (nor would there be drought;-). Outdoor lighting, theft and vandalism would still await invention; no natural or man-made obstruction would conceal horizons; dust, dew and pesky insects would be no more than theoretical phenomena; all birds would be toilet trained. My favorite scope would always be ready at hand sporting a binoed pair of Tele Vue's latest wonder: a 2- to 50-mm Zoom that produces pinpoint stars throughout a 360° apparent field of view. While at it, pizza and beer would have no effect on my arteries or waistline, and intelligent, beautiful women would consider aging, balding astronomy geeks the acme of manhood. OK, I'll throw in world peace too.

But I don't live in my dream world – yet. Till then, I either have to set up and take down all of my equipment whenever I want to view or photograph the night sky – no small feat – or do something to secure the stuff from elements, thieves, and vandals, in the ready position, and all while obstructing as little open sky as

possible.

Like many, my list of considerations included cost, ease of assembly/disassembly, and comfort of use. But because I'm primarily a visual observer and enjoy random star hopping of large sections of sky, I focused on systems that offer the most expansive views: roll-offs, clam-shells, and the POD. I decided against a roll-off mostly because of the ease-of-assembly and -disassembly factor. Given competing projects, I just didn't have the time to build another and wasn't looking forward to dismantling and moving the thing when I relocate in a few years. The more traditional clam-shell options also could not match the ease of assembly of the POD, nor did they fit as comfortably in my limited astro-stuff budget.

Logical? Not entirely. I had a chance to visit an early POD prototype some years ago and experienced the too-familiar why-didn't-I-think-of-that sensation we often have when faced with out-of-the-box thinking in astro-equipment innovation. The POD struck a chord and I've simply wanted one since. Plus, it didn't hurt that kids are naturally attracted to the things and I enjoy sharing practical astronomy with kids. But ask another day and I'll be back to pretending that the selection was based strictly on objective criteria and rational analysis.

### Assembly

My POD arrived in late summer of last year and sat in large, unopened boxes for weeks before I found time for assembly. A neighbor and I got around to that in late September and completed assembly in about four hours, although we would have managed it in less had we watched the included DVD before starting. Yes, you'll figure it out without the video, but some steps are most easily performed before others, so watching the DVD will save you time.

We installed the POD on a 10-foot by 10-foot concrete pad that was designed to accommodate an XL3 configuration, but I ended up ordering the XL5 instead, so a few of the bays overhang the pad by inches. Since the bays each have sturdy, integrated floors, I've noticed no practical effect on function or stability.

I fastened the POD to the concrete pad with Red Head-brand 3/8-inch by 3-inch Hex-Sleeve Anchors (bought at one of the "big-box" stores) inserted into holes drilled with a 3/8-inch masonry bit through the two anchor points molded into each of the six POD sections. After several caulk blends proved unsatisfactory due to shrinkage or failure to cure, I ended up sealing all joints and seams, including those between the bottom of the POD sections and the concrete pad, with pure, clear silicone. Both precautions would soon prove significant.

### More Is Better

On most nights my POD houses a 10-inch f/5.6 Newtonian carried by a highly-

modified Meade DS-16 German Equatorial mount (GEM) and portable pier. I've had the old Newt for a long time now and it's still what I'm most comfortable using, so one requisite for the POD was that it be large enough to accommodate that ungainly scope+mount+portable pier assembly. Fortunately, I didn't have to guess at this. Ian Shatwell has designed a software program that is linked on the SkyShed POD website and that simulates various scope configurations within a standard POD. Ian's program predicted that the classic Newt would just fit with its portable pier located at the exact center of the circle formed by the assembled POD, and proved surprisingly accurate. As for the portable pier, I did not install a permanent one in the observatory because it, on occasion, must accommodate other scopes/mounts of varying design.

As mentioned, I originally planned to order three bays for the POD: one for a computer, another for eyepiece storage, and a third for my observing stool. But insecurity got the best of me when it came time to finalize the order and I ended up with a POD XL5 and thus five black-lined bays. Astro stuff, like our atmosphere, abhors a vacuum and I'm now very glad to have the extra two bays. The 10-inch Newt leaves little room in the business area of the POD for anything but people and the five bays provide ample storage for the stuff that has accumulated there – including the stuff I didn't anticipate. As it is, the POD permits comfortable footwork and hassle-free viewing of all areas of the sky, even around the longish, old-school Newt.

### Lean on Me

I'm not as physically stable as I once was and long ago adopted a handicap walker to steady myself at the eyepiece. It's not unusual to find that hours have slipped by while studying planetary detail, but for me that is now only possible if I have something – preferably something other than the scope – to lean on while viewing. I worried that the POD would not provide enough room for me, the walker, my observing stool, and the scope, but needn't have. Wherever I sit or stand when using the scope, the walls of the POD itself are within comfortable reach and my hands find a steadying grip without need of thought or walker.

### The Really Important Stuff

Most discussions of the relative merits of the POD end up focusing on viewing at zenith, weather resistance, or heat build up. Here's my experience:

I recently viewed Mars for several hours as it passed within 10 degrees of zenith and, despite the 10-inch Newt's portable pier being centered in the POD, enjoyed unobstructed views the entire time. Indeed, I regularly use that scope to study objects even nearer zenith and have yet to find a dome-to-scope orientation that failed to allow me to observe any chosen target thanks to the built-in offset inherent to the design of the old GEM. That said, I will soon invest in SkyShed's POD Zenith Table (PZT) to allow even more expansive views and for those

whose principal scopes are obstructed by the POD dome when aimed at zenith, the PZT innovation offers a handy, inexpensive solution.

Although I've yet to use my POD during the heat of summer, September here in the Deep South is often hotter than many of you will experience during the dead of summer at higher latitudes. Heat build up is a problem, so I opted for an insulated primary dome and black-lined bays. I park the dome with the insulated primary section facing south and have installed a small, removable fan positioned to blow against a point along the "flow-through ventilation" space provided by the overhang-protected area between the base of the dome sections and wall tops. I leave the fan running whenever the dome isn't in use to promote air exchange and minimize moisture and heat buildup. I also park the Newt aimed at zenith, so its full-thickness primary mirror rests as low to the relatively-cool POD floor as possible. Day/night temperature divergence here generally ranges from 20° to 40°F, depending on season, with 30° being typical. But even on those rare days when nighttime lows were more than 40° less than the day's high, the temperature of the primary mirror has rarely varied by more than 20°. Cool down simply hasn't been a problem and has certainly been less of one than when I've used the old scope in the field at star parties and such.

As for weather resistance, that aspect was severely tested on October 29 when 19 confirmed tornadoes touched down within a 50-mile radius of my home, accompanied by more than five inches of rain at many locations in those same few hours. I was far luckier than some. The storms split a tree adjacent to my home and the fallen section damaged much of the rear portion of the roof before its upper limbs settled on the POD. After removing the tree, I couldn't find as much as a mark on the POD. The thick polyethylene is truly tough stuff and I suspect that more rigid materials would have cracked under the assault, as did my house. Wind gusts at my home exceeded 75 mph, but the POD stood solid, and I was glad I'd gotten around to anchoring it to its concrete foundation.

The next morning I found water in the POD – not from falling rain, but from the flash flood it created. Indeed, the waterline inside the POD rose to about a quarter inch, with none in the bay floors, while that against its outside walls topped out at roughly three inches, just under the threshold. My home shop did not fair as well and I was glad I'd taken the time to seal all of the POD's joints. The event served as an object lesson in the permeability of bare concrete and I wish I had thoroughly sealed the entire slab before installing the POD.

Altogether, we received more than 20 inches of rain during the month of October and the morning of the 30th is the only time I've noticed moisture in the POD. I credit this to continuing improvements in its design and the fact that I followed the dome-section weather-seal installation instructions exactly. I realize that others have reported varying degrees of leakage in theirs, but my experience serves as anecdotal evidence that it is indeed possible to install a truly weather resistant POD, even in the rainiest climates.

I live in what many of you would consider climatic hell and it managed to freeze over a number of times this winter, with several snow events, including five inches of the rare stuff on February 12. The snow did not stick well to the POD's self-cleaning surfaces and so didn't provide much of a snow-load test, but, consistent with its rainfall resistance, I noticed no moisture within the POD after the snow had melted.

Nor have I experienced collection of dew on the scope housed in the POD or the equipment stored within the recesses of its bays, even when viewing under the most challenging predawn conditions of last fall here in humid Louisiana.

### Serious Astronomy

When I consider the many remarkable individuals I've met for whom astronomy serves as primary vocation and/or avocation, it is characteristics such as focus, discipline, integrity, generosity, independence, curiosity, and industry that stand out. But for a field that attracts those of such uniformly positive character, it also boasts a surprising wealth of delightfully unique characters. You may all be more inquisitive and knowledgeable than most, but you're hardly from some cookie-cutter mold. On the not-so-positive side, some of us can be unreasonably stubborn in our beliefs, regardless of merit, and that later trait has rarely been more notably demonstrated than in the face of recent astro-equipment innovations such as the POD.

I chuckle each time I hear or read a derogatory reference to PODs as backyard toys. True, they're made of the same stuff and in the same manner as the Little Tykes-brand play sets my daughters enjoyed, but that's the beauty of them. I suspect that the durable playground equipment I purchased more than two decades ago has yet to wear out and is today serving a second generation in daily rough-and-tumble play.

Similarly, I'm left to wonder at debates over the relative seriousness of astronomical equipment and the uses we put it to. For my part, I don't consider myself a serious astronomer, at least not to the extent that the label envisions one whose only focus is on gathering and analyzing arcane data to further mankind's collective knowledge of the cosmos. That's not to say that I don't value and enjoy gathering arcane data; I do. But, the reason I spend each and every clear-night opportunity viewing the heavens is far more basic and selfish: I simply love it – so much to see; so much to share! And any product – from the most basic to the most sophisticated – that makes personal involvement in astronomy at any level more accessible and enjoyable, needs no further justification in my humble opinion, even when put to such purely frivolous uses as mine.

As for "serious astronomy," there are many enthusiasts who currently use their POD-based observatories to collect the purest scientific data. Indeed, it's a

growing trend. Plus, I count as personal friends several "professionals" who spend their day jobs in more traditional observatories, but for whom PODs serve as their personal observatories. So enough with the serious-astronomy, real-science conceit! It's tedious, unattractive and counterproductive. Too preachy?

Perfection?

Is the POD perfect? No, like much of the astro equipment we use, it represents a collection of practical, prudent compromises designed to accommodate a broad range of users and uses. While it's not for everyone or every application, I know of no alternative that has broader appeal or that is more easily configurable.

There will come a day when my arthritic knees no longer manage the quarter squat required for entering the thing, but for now, it's so far, so good. When I can no longer step through its door with relative comfort, I'll dismantle my POD and pass it on to someone – perhaps a grandchild – who can. Till then, it greatly enhances my home observing experience and I'm thankful to live in a market that offers so many attractive, competent, and affordable observatory options. Meanwhile, I get to enjoy anticipation of an eventual replacement for my POD, even as I'm busy customizing it to better fit my current needs!

As with most astro-equipment investments, customizing and tweaking the POD has been at least half the fun. I ordered one bay-pull-out-shelf assembly with the POD, but will add at least two more, and I have already mentioned the addition of a PZT. I've studied other user recommendations for interior lighting and plan to add at least one string of red LED rope lights, but I'm also considering one of white LEDs as well. I found inexpensive deals on 50-foot strings of both on eBay.

A priority is painting the interior and bottom edge surfaces of the secondary dome flat black. Its existing gray surfaces are surprisingly reflective – at least to my dark-adapted eye – when catching light from misguided neighbors' porches. I hope the flat-black surface will dull these distracting reflections. I also plan to cover the interior concrete floor with interlocking squares of rubberized foam flooring material that I found at our local Harbor Freight store. With luck, it'll reduce fatigue from prolonged standing and provide a softer landing for the expensive stuff I drop from time to time.

Meanwhile, our publisher has suggested on several occasions that I help organize development of a system for "automation" of the POD and, while that would certainly be neat (and make for interesting magazine content), I'm not sure it would enhance my enjoyment of the observatory in any meaningful way. True, when imaging from the observatory – even remotely from within my home – I have to first open the dome and position it so as not to obstruct the imaged field for the planned duration of the exposure, but the fact is that I'd have to enter the POD anyway, if only to remove the lens covers from the main and guide scopes. Here's one I've long puzzled over: I've visited a number of well-equipped,

sophisticated observatories used primarily for remote imaging and none featured automated lens covers. Not one! Night after night, someone has to enter each observatory, if only to remove lens covers, or risk leaving critical components unprotected when not in use. So, it seems that a universal-fit lens-cover-automation system is a more pressing innovation than automation of the POD dome opening and rotation.

The current production POD is far more refined than the early prototypes I admired just a few years ago and, to me, one of the most significant improvements was the substitution of in-line skate wheels for dome rotation. The prototypes rotated easily, but their harder, wider wheels were decidedly loud. I envisioned posses of enraged neighbors bent on lynching the source of 2:00-a.m. rumbling, but the skate wheels operate far more smoothly and quietly. Plus, given that it reveals half the night sky when stationary, I don't find myself rotating the open dome as often as I'd feared. Ditto improvements to the weather seals. User input and in-field trial-and-error modification have resulted in a system that, for me, proved just short of miraculous.

#### Bottom Line

Despite my relatively limited experience (I've been at this for less than 10 years), I'm regularly asked to recommend astro equipment for specific applications; and although there are a number of roll-off-roof- and domed-observatory products that I often recommend, when it came time to analyze my home needs, the optimum solution was SkyShed's POD. I'm thrilled with the choice and look forward to every night spent in it.

Gary Parkerson  
Managing Editor  
Astronomy Technology Today