Imagine the Details

Small Sagittarius Star Cloud (M24)
Pentax 125 SDP with Canon EOS 20Da

75 SDHF
- 500mm FL. F/6.7
- 70mm Image Circle
- APO 3-Element/ 2-Group Design
- Rack & Pinion Focuser
- 4.8 lbs
- $995

100 SDUF II
- 400mm FL. F/4
- 88mm Image Circle
- APO 4-Element/2-Group Design
- Precision Helical Focuser
- 8.8 lbs
- $2995

105 SDP
- 670mm FL. F/6.4
- 88mm Image Circle
- APO 4-Element/2-Group Design
- Rack & Pinion Focuser
- 13.2 lbs
- $4395

125 SDP
- 800mm FL. F/6.4
- 88mm Image Circle
- APO 4-Element/2-Group Design
- Precision Helical Focuser
- 22 lbs
- $6995

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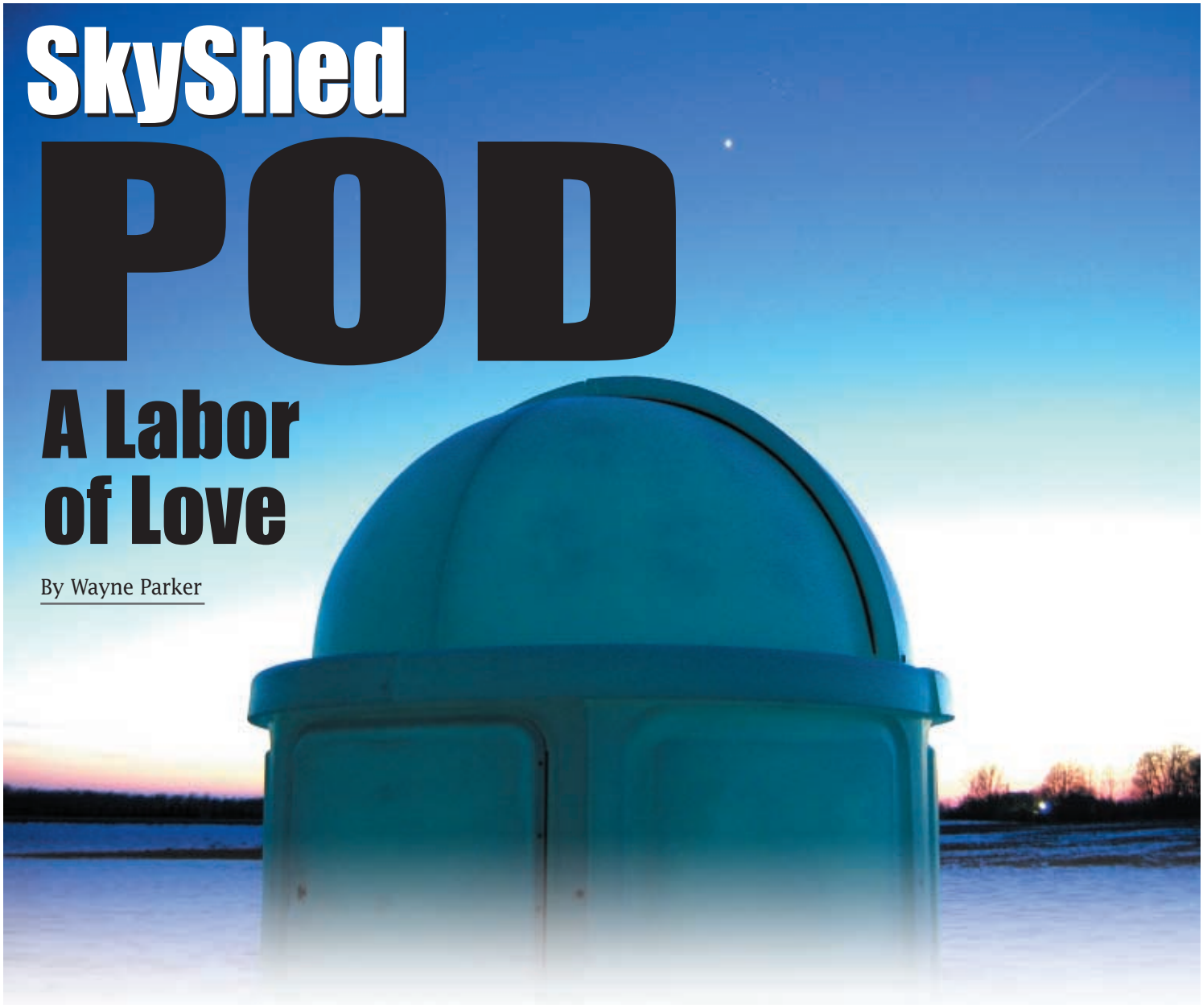
SkyShed POD

A Labor of Love

By Wayne Parker



Like many astronomers I was drawn to astronomy by sci-fi movies, TV programs, and books by authors like Clarke, Heinlein, Bradbury, and Asimov. Also, like many, I was drawn to music by bands like the Beatles, the Rolling Stones and other popular groups of my youth.

They say that if you want to be happy, you should make your passion your life's work. At around the age of 14 making music and searching the heavens solidified themselves as my life passions. Actually, those two and the pursuit of girls. I was 14 after all!

Throughout my teenage years I divided my time between school, family, part time jobs, playing in local bands and setting up my little Celestron C5 scope every chance I got. I'd employed star hopping to the brightest sky objects, always pushing for that next magnitude darker object to show itself in my eyepiece.

For the most part I observed alone. Most of my friends were not patient enough to stand around while I spent 20 minutes trying to locate a bright NGC object in the eyepiece. Especially on those frigid Canadian winter nights!

After high school I continued in a local band which gained popularity, as I and the other members of the band worked our way through college and played gigs part time. As time passed and income increased (a little) I upgraded my scope to an 8-inch SCT, then a 10-inch SCT, and added a couple of refractors and lots of gizmos and gears to help me spend less time looking for objects and more time observing them.

A couple of years after college I was still in that very same band gigging six nights a week. We were officially "discovered" and

signed to a worldwide recording contract with EMI Records. We recorded our first album over 3 months in the mountains of Quebec. I decided to purchase a Tel Vue "Genesis", so that I would always have a scope with me when traveling.

When I think back to what I looked like walking through airports, I'm amazed I ever made it through security. Imagine long hair, pulled back into a tail, dark shades, black leather coat with LOTS of zippers, the silver metal belt, black denim jeans and leather boots, WITH a tripod strapped to my back and my Genesis packed in well traveled black and chrome case. Put it this way: I think it would take me a little longer to get through airport security today than it did back then.

Our album debuted and before long we were lucky enough to have a few hit songs around the world. This meant lots of traveling and opportunities to turn people on to astronomy. I used every chance I got to set my little scope up and invite people to take a gander. Sometimes is was on the roof of a Paris hotel while on tour with Tina Turner, or next to our tour bus, behind a stadium, in the U.S. heartland, while touring with the band Journey.

I continued to enjoy that little scope on the road, and due to touring schedules and more album recording, I got a chance to gets weeks and even months to settle in for many observing sessions at home without having to travel much at all.

As usually happens when a new decade dawns, musical styles changed and my band's time had now come and gone. Personally I was quite happy because I now had a lot more time to do astronomy and was tired after 17 years of playing music in smoky bars and forever traveling, while back at home, my friends planted roots and raised families.

Since I had tucked away some money, I figured I'd take couple of years off to decide what I wanted to do for the next phase of my life. I kept trying to think of a way that I could spend as much time as possible involved with astronomy, but as you know there's not a long list of things you can do full time in astronomy and still eat well. That is, unless you're a professional astronomer who made the decision to become one way back in high school, a time when I was busy playing guitar, not studying math.

I really enjoyed that time off and got in more astronomy than ever before. I remember getting four great Mars observing nights in a row, one of the few times I left my scopes setup out side due to a dry hot summer. I'll never forget getting time to spend observing one Messier cluster so long that I perceived the "tunnel effect", where for just a fleeting moment, I got the slightest sense of the distance and scale of the object I was observing.

The best thing that happened in that time was that I met my wife Lorelei. I was visiting a friend one day and noticed an astro magazine on the coffee table. When I asked my friend if it was his, he said that it was his roommate's. A female roommate. In all my years in amateur astronomy, I had never met a woman who read *Sky & Telescope* magazine. I HAD to meet this woman. A while later my friend was hav-

Left – Wayne, far left, with the band in 1987.

Below – Wayne, far right, with the band members today

We thought you may be interested in a little more information about Wayne's Rock and Roll past! His band, originally called Tokyo, was discovered in the summer of 1984 and officially became Glass Tiger upon signing a major recording contract.

Their first album, "The Thin Red Line", was released in 1986 setting a record for being the fastest selling debut recording in Canadian history, going gold within weeks of its release. The album received four Platinum records in Canada and went Gold in the United States. The song "Don't Forget Me (When I'm Gone)" reached #2 on the U.S. Billboard charts followed by "Someday" which reached #5. In addition to garnering several Juno awards, Canada's top music honor, the band also received a Grammy nomination for best new artist.

The band continued its success with other albums and has become one of the most successful Canadian groups of all time. They have recorded songs with Bryan Adams and Rod Stewart and toured with some of the most popular bands of the day.

In 2005 they released a retrospective DVD containing all of the original hit videos the band released in the 1980's and 90's along with 2 new videos and songs recorded especially for the DVD compilation. They continue to perform to large crowds on a regular basis and remain a fan favorite. For more information about the band go to www.glasstiger.ca.

ing a barbecue and I was invited. In the dark by the camp fire that night I heard a woman speaking who, I could tell, had the same zest for life and thirst for knowledge that I did. I quickly realized this was the mysterious astronomer roommate. I was in love. It was a case of love at first camp fire light.

Talk about an astronomer's dream come true! We "courted" by attending Royal Astronomical Society of Canada speaker's nights and visiting the planetarium, the local observatory, etc. I now had an observing partner with her own scope who was just as gung ho as I was. All was good.

Wayne, right, and his wife Lorelei, stand with friend and astrophotographer Paul Mortfield, at Starfest 2006.

Eventually the rock and roll money was running out and it was time to get a job. I fell into an IT position with a friend's company and took to the hardware and software business like a fish to water. I spent the 90's working for large computer companies and eventually running my own software distribution businesses. Lorelei and I moved to the country, two hours away from the city, to take advantage of local dark skies.

But then something happened. By the mid 90's I was doing less astronomy each year, as I got busier with business. There was less time to lug my ever increasing collection of scopes and accessories outside – just in time for the clouds to roll in.

The highlight of my and Lorelei's year, was our annual vacation at Starfest, in Mt. Forest Ontario. At Starfest we would try to cram as much observing into one week as possible. In those years few people went early to the star party, but we always tried to arrive at the beginning of the week to take advantage of Starfest's dark, clear skies and get some time (sort of) alone together to help rekindle our partnership.

Every time Starfest ended I started counting the months, then weeks, then days until it started all over again. That's how much we enjoyed it.

At Starfest there is a limited number of full service lots in three rows. The lower of the rows, across from the main tent is "manufacturer's row." Over the years, besides speakers and vendors, the lower row has been where manufacturers rent trailers and setup up their latest products.

Each year I'd sit on the next tier up looking down at the manufacturers setting up their stuff, and say to Lorelei "We have to find a way to get to manufacturer's row." What I meant of course was that we had to find a way to be involved with astronomy 24/7 because that's what we really liked to do.

As mentioned, I had been doing less astronomy each year which was very disappointing. Of course, like all astronomers, I'd love to have a beautiful observatory to use at a moments notice. That would really help. For me that was out of the question not as much from a financial point of view, but because we rarely lived in one place for more than a year or two, and a permanent observatory was out of the question. When I did imagine building an observatory, the price of domes seemed out of reach unless you had the time and patience to build one yourself.

I also noticed that all my astronomer friends seemed to be doing less and less observing for the same reasons – beautiful telescopes taking up permanent residence in the corner of the dining room, instead of the backyard where they belonged.

One thing that had always been in back of my mind was an article from the mid 60's in *Sky & Telescope* (or was it *Astronomy Magazine*?), about a professor who had built a "roll off" observatory in Joshua Tree, California. I'd always imagined that some day I'd find the right place and look up that article for inspiration.

It was 1996 and the Internet was still mostly dial-up. I decided to do some research online to see how roll offs had progressed since the 60's and if many others had built them. I found five websites with homemade roll off shed links.

I was surprised to see that the sheds were still being constructed the same way they had been way back when. The same angle iron on caster design, some with winches, pulleys, motors, all kinds of things that were designed to help you get that big old roof back and forth. That's when I realized the opportunity.

I found that no one had taken a second look at roll off design using modern materials and then commercialized that design in a fashion that enabled the average person to build a great observatory for a couple of thousand dollars.

I teamed up with a friend whose family had been in the business of garden shed building for many years. Over four years of part time work, we developed a new kind of roll off with new design improvements.

Lorelei saw the prototype in action and said it reminded her of the SkyDome in Toronto. She thought "SkyShed" would be a good name. We agreed.

Lastly, we looked at pier design. Since were going to be in the business of observatory building, we were going to need piers, and we didn't notice any sitting around in local astro shop showrooms. Once again, we didn't find what we were looking for in the market of basic pier design.

The piers we found were all one piece designs and people spent a whole lot of time and effort getting their footing set for polar alignment before pouring concrete. We knew that wouldn't work with our easy-to-build SkyShed. So we separated the top of the pier from the rest of the pier. This meant it didn't matter where we aligned the bottom of the pier in the wet concrete. You could turn the pier cap for polar alignment long after the concrete has cured.

We decided we would sell SkyShed in various forms to make it affordable to as many astronomers as possible. We would sell it as a CD filled with six sets of 3D and 2D construction plans and a library of information, as a kit that you assemble, and as full installation to customers within our local area.

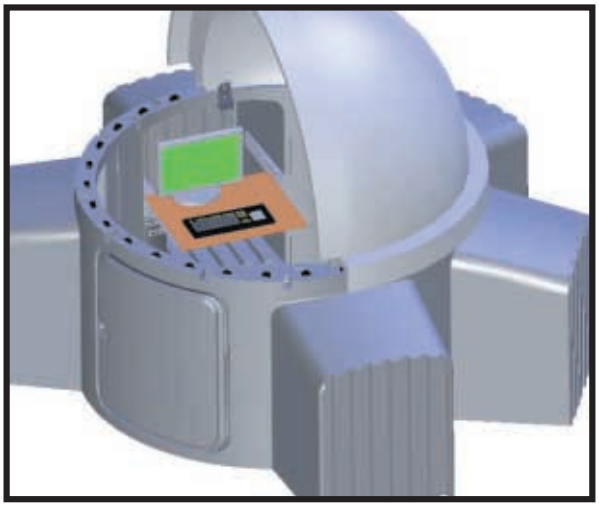
We built a 10' X 12' prototype in my backyard that functions as well today as it did the day we finished it in 2002. The pier also has worked flawlessly.

We debuted SkyShed at Starfest in 2003. We had finally made it to manufacturer's row! Talk about baptism under fire. We knew that we were arriving with something that most astronomers had never seen. An attractive log cabin style, 6' X 8' garden shed, with little flower boxes that would keep the astronomer, as well their family and neighbors, happy at the same time. No more utility box style roll offs, with all those pulleys and wires.

SkyShed was an instant hit. In the following four years we've sold more than 3,000 sets of SkyShed plans and hundreds, if not thousands, of SkySheds are in existence and I believe we can say that in numerical terms SkyShed is easily one of most popular observatory designs ever. Thank you SkyShed owners!! And we were just getting started.

Way back at the beginning, we also looked at dome observatory designs. We quickly realized that where a shed product would take tens of thousands of dollars to launch, a dome product would take hundreds of thousands of dollars. So we put the dome on the back burner while we developed and launched the Shed.

We used to get a kick out of people pegging our new company as a "roll off" company while we realized that with luck, in time we would be an "observatory" company with both roll off and dome designs



A computer schematic of the POD XL5

offered.

During 2003 my Shed building partner, Brad, landed a large contract with a pool company and we parted ways. I started developing the new dome product by myself.

Once again, I didn't see my vision of an observatory in the market. It was like time had stood still since the 1800's. Nothing of substance was affordable to the average astronomer, unless you wanted to build it yourself. Even the plans I found were $400! And they still used slots copying big professional dome designs. The problem is that with small domes this created a chimney effect in cold weather and a good cross wind could create quite a whirl wind inside a small dome.

The main thing that bugged me was that I couldn't see the sky, just a small slice of it. As an astronomer who had spent his life trying to get out under the stars, I couldn't get past standing in a booth with only a slice of sky showing. I knew I'd miss the little things like shooting stars and satellites passing over head.

I sketched out all the alternatives I could think of that created a much larger window on the sky and would mean much less turning of the dome to view objects over long periods, meaning no need for a motor, pulleys, wires, etc.

I was happy with my design sketches, but I couldn't find an alternative to expensive fiberglass or aluminum, the material most often used with existing designs. As I mentioned earlier, we moved to the country many years ago and for all those years I've driven by hundreds of "calf shelters" made of polyethylene. Inspiration struck!

I started to ask local farmers about these shelters. They seemed to last forever and looked indestructible. My questioning led me to a local polyethylene manufacturer and I brought them my sketches to see what they thought. When they saw my sketches and I asked if they could execute my design with their materials, their response was "absolutely!"

I spent the next year determining if, it could in fact be done affordably, with all the features I knew astronomers would demand.

Next I enlisted a well known engineer, Farhat Hanna, whose specialty was automotive and nautical design. I knew he would have to learn the peculiarities of plastics manufacturing. His designs were subtle, yet brilliant, and I knew he was the engineer for the job. For the next year Farhat and I worked together on new dome designs, while I ran SkyShed Observatories and our roll offs gained in popularity around the world.

One of our research strategies was to join as many online forums as possible and I spent time each day reading about the problems astronomers had and what they needed in an observatory solution. We used this information to tailor a design that would fit the vast majority of users and we found that we could do it affordably.

We ended up with these demands. It had to be well priced. It had to be both permanent and mobile so that it could be left up all the time, or just used when time or circumstances allowed. It had to have a large viewing window and no motors, pulleys or wires. It had to be "shippable" (unlike our roll off). It had to be light so that almost anyone could handle its parts. It had to be family and neighborhood friendly.

It also had to be customizable with a design that could accommodate many different configurations for different uses, such as simple observing or serious astro photography. It had to work with many different scopes and mounts and had to have a low enough wall so that both owners of smaller and larger scopes would have a good view of the horizon.

It had to be lockable to secure equipment from theft. It had to be strong, even with no floor, so that users would not have to utilize an isolated pier and could later add a pier as funds allowed if they wanted. Users had to be able to set it up on soil, gravel, concrete or a wooden deck.

It had to withstand extreme weather and work in extreme cold and heat. It had to be very low maintenance and ready to use right out of the box. And most important, it had to last a long time.

Another year went by while we devel-

oped designs based on the above parameters.

Finally, we came up with a design that ranked high in all departments. Farhat created the first CAD drawings and when I saw the back of the new dome in white, it reminded me of the back of the Pods in the movie 2001: A Space Odyssey. In need of name, we called the new dome "P.O.D.", for "Personal Observatory Dome", knowing that most astronomers observed alone or with only one or two others present. We prefaced POD with SkyShed for trademark and branding purposes, and the "SkyShed POD" was born.

Our next task was to find the right mold makers and plastics manufacturers with whom to entrust our new creation. We visited many shops and factories and after six months of visits, we decided upon mold makers Royal Pattern in Cambridge, Ontario and SPI Plastics in Owen Sound, Ontario. Both companies stood head and shoulders above all others we interviewed.

Before long SPI and Royal were just as enthused and passionate about POD as we were. All of us swore that we would cut no corners or cross off any features on our way to creating the ultimate low cost, high quality, full observatory solution.

At this point we started to contact friends within the industry and swearing them to secrecy before showing them the new dome CADs. Their reaction was fantastic. They said things like "You'll sell a million of these," "This thing will shake up the community like never before," and "This will change amateur astronomy as we know it!"

With the confidence of this kind of feedback, we went about raising the hundreds of thousands of dollars it would take to create and develop the rest of the project.

Another year quickly passed. We found the funding we needed without having to give everything away, with a non profit organization know as the Canadian Futures Development Fund, who has been an excellent partner.

Top Image: You can get 21 people in a POD (if you have that many friends!)

Bottom Image: Wayne and many of the members of the team who made POD a reality.

By 2006 I was getting tired of keeping the secret and by then so many people knew about POD that I was sure something would slip out. The only thing we were waiting for was the go ahead from our patent lawyers to show our new design to the public. As winter melted into spring, we realized that if we didn't announce something soon, we'd lose yet another year as astronomy tended to be seasonal for the most part in the northern part of the northern hemisphere.

When Royal and SPI told us were three to four months away from producing PODs, we did it. We turned on the switch to our website at 7:21 am on April 21, 2006. We released a first "teaser" flash ad that let people know a new product that could fundamentally change amateur astronomy was on the horizon. We got almost 20,000 web hits in our first week.

Within two weeks the boys at Royal came to us, hat in hand, to say that they thought it would be more prudent to make POD molds one at a time, instead of all at the same time, as originally planned. This would push the launch back from late summer to early fall. Meanwhile we had been telling people we'd be testing in the summer!

They were wrong about how long it would take. Very wrong. As I write this just over year later, full production PODs are being made for the first time. Hundreds of them are being boxed and readied for shipment.

In the last year we've been developing international distributors and retailers, as well as contacting astronomy clubs and other groups. Beta testers have put POD through its paces and overwhelmingly they have told us that it passed with flying colors.

This May and June the astronomy community is going to see the largest deployment of observatories that has ever occurred at any one time. Since we know that when astronomers have an observatory they tend to observe WAY more, I predict that more astronomy will be done in the next few years than has ever happened before. Only when that has occurred will we feel that POD has been a complete success.

By the time you read this, PODs will be on the way to Europe, then to Oceania and Asia. Once a couple of thousand PODs are in place we will launch the SkyShed Observer Network (S.O.N.), and plug all those observatories into each other, creating a real-time network of observatories, the likes of which has also never been seen. We call it "Phase Three." But that's another story.

In the meantime a HUGE thank you to the thousands of people who have supported us, been patient with us, and understood, while we tried our best to fulfill our mission of "More Astronomers, Doing More Astronomy, More of the Time." ATT