

# TRIED & tested

We review well-established equipment that's stood the test of time

## VITAL STATS

- **Price** £3,395 plus delivery
- **Style** Traditional dome
- **Dome size** 2.2m diameter
- **Finish** Fibreglass
- **Aperture size** 0.6m
- **Supplier** Pulsar Observatories
- **www.** pulsarobservatories.com
- **Tel** 01366 315006

# Pulsar 2.2m home observatory

A dome of your own that works in a typical back garden

WORDS: STEVE RICHARDS

Installing an observatory is a great leap forward in convenience because your equipment is instantly available for use on those evenings with clear skies. You can build one with a roll-off roof relatively easily, but making a domed one is much more complex. Buying a ready-made one is the more popular choice.

The 2.2m Pulsar domed observatory described here is supplied as a comprehensive kit that needs assembling, though Pulsar will install it for you at additional cost provided you have completed the groundwork in advance.

Full instructions for preparing a suitable base (you have the choice of concrete or decking) including the installation of the mount's pier are available for download. We opted for a concrete base, comprising an isolated central block for the pier and a conventional concrete platform for the observatory walls to sit on. Before pouring the base concrete, we laid in several conduits to allow for mains power, network cabling, security alarm cabling and a drainage pipe for the dehumidifier that we were going to install.

The observatory was delivered in sections: four quadrants each for the walls and dome, plus the shutter.

This design allows the components to be delivered to locations without wide access, which was a prerequisite for our site – a typical back garden. The quality of the fibreglass mouldings was excellent, with a rich white gloss external surface and a matt black paint finish to the inside of the dome sections.

## It's not as complex as it looks

Assembly is very simple, requiring only a set of spanners, and it can be completed by two people with average DIY skills. The dome and wall sections bolt together through pre-drilled holes in their flanges, after the application of a bead of silicone down their edges. Once assembled, the cylindrical wall is bolted to your base and the support and thrust wheels are fitted to the top of the walls to support and guide the dome section.

The shutter is then installed on the dome section, with its nylon retaining wheels and the simple pulley system attached. Finally, the dome section is lifted up and on top of the walls. We were very impressed with how effortlessly the dome section rotated and how easy it was to open and close the shutter.

The observatory can be supplied with an azimuth motor drive and controller to automatically rotate the dome section – this can also be added later as ▶

**SKY SAYS...**  
The Pulsar observatory has been a great boon to our imaging sessions

STEVE RICHARDS X 3, MIKE HARDWICK

## OWNER'S OBSERVATIONS

**Name** Mike Hardwick  
**Location** Kings Lynn, Norfolk  
**Product** Pulsar 2.2m dome  
**Owner since** May 2014

Having viewed a 2.2m dome at the factory I was impressed with the quality and the enthusiasm of the staff at Pulsar. Eight weeks later I had assembled my dome with my son without problems. Software setup for tracking was initially challenging but not the fault of the dome, and I soon got the system up and running.

I use my dome remotely but noted the solar panel did not keep the battery

charged in the winter. I subsequently installed a bigger panel after I realised I had sited my dome in May, when the Sun is high in the sky. In November, the lower Sun rarely shone on the dome, hence additional panels and control system. It's not a fault of the dome, but something to bear in mind when you are thinking about where to site your observatory.

I love my dome and would recommend it to anyone, I can image even in strong winds when my roll-off roof friends are grounded. A big expense, but one that I feel has been fully justified.



## SUPPORT AND THRUST WHEELS

The dome section rides on eight rubber wheels with ball bearing supports. Set at right angles to these are eight thrust wheels, which keep the dome centred on the top of the observatory wall. These work so well that the dome can be rotated under the pressure of a single finger.



## DOMES OPENING

The dome section has a sliding shutter that exposes an opening 600mm wide that is suitable for telescopes of up to 12 inches in aperture. The design allows the shutter to open past the centre of the dome, thus allowing telescopes to easily point at the zenith with an unobstructed view.

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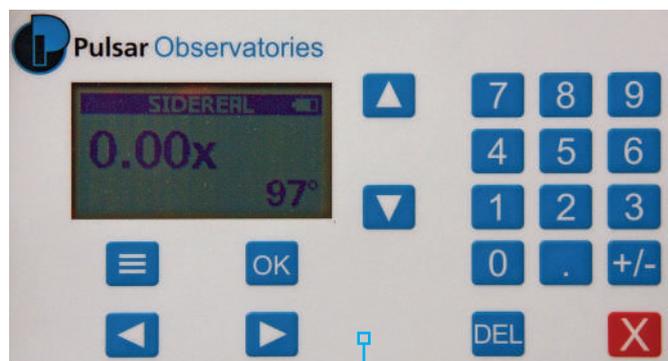
## DOMELock

Although the dome section is very unlikely to lift even during storm conditions, as an extra precaution the observatory is supplied with two dome locks. These locks are set at 180° from one another and simply swing into place when required, negating the risk of 'lift-off' and adding additional security against a break-in.



## DOOR HANDLE

Security and convenience are important aspects of an observatory and the chrome finished door handle allows both easy access through the observatory door and a secure method of keeping it shut during an observing session. The handle is lockable from the outside to give a level of security when the observatory is unattended.



## AZIMUTH DRIVE

The observatory can be fitted with an azimuth drive unit that can be set to rotate the dome section at sidereal speed rate. Alternatively you can use a computer to control rotation, using the supplied free software to ensure that the telescope always points through the centre of the aperture.

► an upgrade. There is a further upgrade to incorporate a motorised shutter. For our observatory, we opted for both of these upgrades and they proved a very worthwhile addition, allowing fully automated operation of the dome during our imaging sessions. Other options include up to three large accessory bays to give extra storage space for your gear, interlocking floor tiles and an intruder alarm, though we didn't include any of these.

The design of the observatory makes it completely weatherproof. In the heavy rainstorms and gales that hit southern England during the summer of

2015, not a drop of water entered the observatory. However, as an extra precaution against severe winds, the dome section can be held fast to the walls using the supplied 'dome locks'. For security, the door to the observatory can also be locked. We found that when left ajar, the door acted like a sail even in the lightest breeze, so we installed a post and a simple cabin hook to clip it to when open, which stopped it swinging about.

With all our imaging equipment installed in the observatory, there was still plenty of room for up to three people although you do need to carefully shuffle past the counterweight bar if you are using a large equatorial mount.

The Pulsar observatory has been a great boon to our imaging sessions and we wouldn't hesitate to recommend it to astronomers of any experience level. Do note that any electrical connections should be installed by a qualified electrician; an alternative would be to use a caravan extension cable from your house with a matching socket installed on one of the wall quadrants. Ⓢ

### SKY SAYS...

Now add these:

1. Additional accessory bays
2. Motorised shutter
3. Observatory flooring kit

## VERDICT

|                  |       |
|------------------|-------|
| ASSEMBLY         | ★★★★★ |
| BUILD AND DESIGN | ★★★★★ |
| EASE OF USE      | ★★★★★ |
| FEATURES         | ★★★★★ |
| UPGRADABILITY    | ★★★★★ |
| OVERALL          | ★★★★★ |

STEVE RICHARDS X 4