

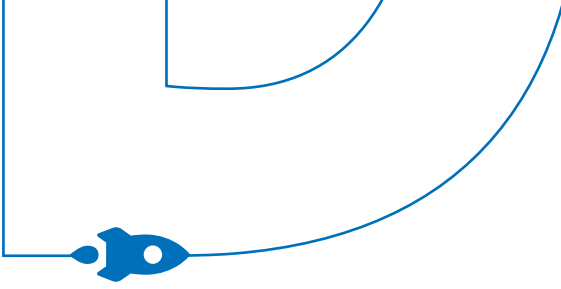


**HOW TO
FIND YOUR
PERFECT
PLANETARIUM
SYSTEM**





THE BASICS



When you are shopping for a planetarium system, there are many factors to consider that can make the process seem overwhelming. This buyer's guide is designed to explain planetarium systems so that you can navigate the process more effectively and find a system that is the ideal fit for you.

Today's Planetarium Systems

The earliest planetarium projectors were optical-mechanical devices known as starballs, with holes or lenses to project the stars and gears for positioning the naked eye planets and the Moon.

Today most planetarium systems are software-based, meaning they can project almost anything onto a dome in a 3D shared immersive environment.

The main components of a typical modern digital planetarium are the simulation software/computer hardware, user interfaces, projector(s), and dome.





PLANETARIUM PROJECTION SYSTEMS



Planetarium Domes

Your dome size and style will help determine the ideal projection system. There are three main types of planetarium domes:



PROS

CONS

Portable Inflatable

- ◆ Fast and easy set up (minutes)
- ◆ Compact packing and storage
- ◆ Simplest design, least expensive
- ◆ Easily stowed when not needed

- ◆ Audience typically sits on floor
- ◆ Handicapped access is difficult
- ◆ Some fans are loud
- ◆ Usually indoor use only

Negative Pressure (Framed)

- ◆ Does not deflate when door opened
- ◆ Easier handicapped access
- ◆ Lower cost than a fixed dome

- ◆ Long set-up time (typically permanent installation)
- ◆ Large and heavy
- ◆ Constant electrical use
- ◆ Fans can be loud

Fixed

- ◆ Installed once
- ◆ Audience seated in chairs/benches
- ◆ No fan noise or electrical use
- ◆ Best option for multi-projector systems, cove lights, etc.


- ◆ Most expensive
- ◆ Requires the most space

What is Your Presentation Style?

Full-dome movie or scripted playback: Easily reproducible but passive; the content will never vary no matter the audience's response or needs.

Live (lecture): Passive; one-way communication.

Live and Interactive: Two-way, active communication. The most educationally effective type of program because it engages the audience and responds to their needs.



Your dome size and type will define your projection options, which define your software and hardware options.

Planetarium Projection Systems

Choosing the right projection system is a critical consideration, but it depends on multiple factors. There are three main types of digital planetarium systems:

PROS

CONS

Spherical Mirror

- ◆ Potential DIY project

- ◆ Uneven focus
- ◆ Areas of distorted projection
- ◆ Non-uniform brightness and pixel sizes
- ◆ Requires unidirectional seating

Fisheye Projector

- ◆ Typically uniform projection with consistent focus
- ◆ Supports any seating configuration
- ◆ Fast set up/portable

- ◆ Typically more expensive than a mirror
- ◆ Dimmer and lower resolution than a multi-projector system

Multi-Projector

- ◆ Highest resolution and brightness

- ◆ Not suitable for portable domes
- ◆ Highest cost
- ◆ Greatest complexity

Simulation Software/ Hardware

There are many applications to choose from when it comes to simulation software. Keep in mind, your projection choice will often define your software and hardware options.

User Interfaces

User interfaces are what an operator uses to interact and control the simulation software. Today, you have many intuitive options from which to choose,

including a desktop or laptop, tablet device, gamepad or joystick for flight control, and handheld remote control. In selecting your system, always consider your specific presentation style and how the interfaces accommodate them (or not).

Many systems offer a feature-rich but extremely complex graphical user interface (GUI) that is difficult to learn and use, especially for live programs.



Would you let someone who doesn't even drive buy a car for you? Involve the planetarium staff in the selection process!



PLANETARIUM CHECKLIST

Your Checklist for Choosing a Planetarium System

The best approach to finding your ideal system is to work in partnership with planetarium-specific vendors. Remember that many things sound better on paper than they perform in real life, so make sure to see and test-drive all systems when possible.

You can use the questions below as you work with planetarium vendors to frame the conversation and ensure you find the right fit.

Portable Dome

- ✦ What diameter dome will fit your desired audience sizes/ages?
- ✦ How much space (including clearance height) does the dome require? Will it fit in the room(s) you have available?
- ✦ How loud (in decibels at 1m distance) is the dome inflation fan? Will you and the students be able to hear each other over the fan?
- ✦ Can the fan speed be adjusted from inside the dome?
- ✦ How long does the dome take to set up/take down? How many people are required?
- ✦ How easy is it for people to enter/exit the dome?
- ✦ Does the dome allow for wheelchair users? How?



Portable Planetarium System

- ◆ How important are projection quality and resolution to you?
- ◆ How much room will the projection system and operator equipment take up in the dome?
- ◆ Where does the projection system sit in the dome? Does it need any special care, such as protection from being touched?
- ◆ How long does it take to set up/pack up? How many people are required?



- ◆ Does the system cover the full dome/sky completely and uniformly? Is there consistent focus over the whole dome?
- ◆ What user interfaces are included? Are they ergonomic and intuitive?
- ◆ Are interfaces wireless so that the operator can move around the dome for maximum interaction?
- ◆ Will the projector light shine in anyone's eyes?
- ◆ Will any views be blocked by the equipment?

Portable General

- ◆ Will your operator(s) be able to easily learn the selected system?
- ◆ How will your operators be trained?
- ◆ What are the weights and dimensions of each packed component?



- ◆ Are the bags/cases rugged and long-lasting?
- ◆ Do large items have wheels and handles?
- ◆ How much storage/vehicle transport space is required?
- ◆ Can your operator(s) lift/move each component easily without assistance?

Software General

- ◆ Does the software meet your content needs and presentation style(s)?
- ◆ Does it have intuitive user interfaces that fit your presentation needs?
- ◆ Is it dome-specific (not a shoehorned desktop application)?
- ◆ Must you break the immersion by having to launch different applications or modes to play media, show planetary datasets, etc., or are these functions integrated?



- ◆ Is it continually being maintained and enhanced by a reliable/supported team?
- ◆ Does the vendor use third-party software or do they develop it themselves? Do they accept and track feature requests and bug reports?
- ◆ Does the developer provide the customer support level you want?
- ◆ Does it fit your budget now and over time for an initial purchase, updates, upgrades, and support (total cost of ownership)?



Fixed Domes

- ◆ Do you need a new fixed dome? If so, we recommend working with an architect who has planetarium experience.
- ◆ If you have an existing fixed dome, what is the diameter (measure to be safe)?
- ◆ Do you need to clean or repaint your fixed dome? A gray color works best with digital projection to enhance night sky darkness.
- ◆ What is the springline height of your dome? The springline is the distance between the floor and the bottom edge of the projection.
- ◆ Do you need to upgrade your seating configuration?
- ◆ Is your dome tilted or level?
- ◆ Do you need new cove lights, audio system, or console desk?

Fixed Projection System

- ◆ Do you prefer a center-mount or cove-mount system? Do you have room for only one or the other?
- ◆ Are resolution and brightness or budget more important to you?
- ◆ Do you prefer a lower maintenance single projector system or a higher resolution multi-projector system?
- ◆ Does the multi-projector system use physical lens masking for the best contrast?
- ◆ Does the multi-projector system use camera-based auto-calibration for ease of use?
- ◆ Will any views be blocked by the equipment?



NEXT STEPS

No one is more committed to your success as a Planetarium Leader than Digitalis. We offer an array of valuable services to help you maximize your experience, use, and presentation of your planetarium system.

Ready to explore your next steps with Digitalis?

- ◆ Request a Digitalis Planetarium Solution Overview
- ◆ Visit our Website at www.DigitalisEducation.com
- ◆ Schedule a Consultation with a Digitalis Planetarium Specialist

Founded in 2003 by software architect Rob Spearman and planetarium director Karrie Berglund, Digitalis combined their knowledge and experience to fill an unmet need in the planetarium field.

As a team, Digitalis developed the world's first truly affordable digital planetarium system with the breakthrough Digitalium Alpha planetarium system. Subsequent systems for portable and fixed domes continue in this innovative mold, offering what the Digitalis team believes is by far the best value on the market for practical astronomy education.

Their innovations are grounded upon a unique blend of technical expertise and real-world astronomy education experience. In all its endeavors, Digitalis seeks to offer the most cost-effective, easy-to-use, and practical astronomy education tools.



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