

EMERALD™ 4K-LASER

EMERALD™ cove & central mounted planetarium projection systems
Designed and built with emphasis on education as well as entertainment usages, with a plug-n-play approach.

Emerald planetariums brings its unique brand of craftsmanship to provide customers with the finest equipment, following the highest standards, and innovative design practices.



Planetarium shows & Software included



Wireless remote control



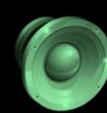
Super fast Computer



Unique Customizable Fisheye lens



High luminosity & contrast



Surround audio output



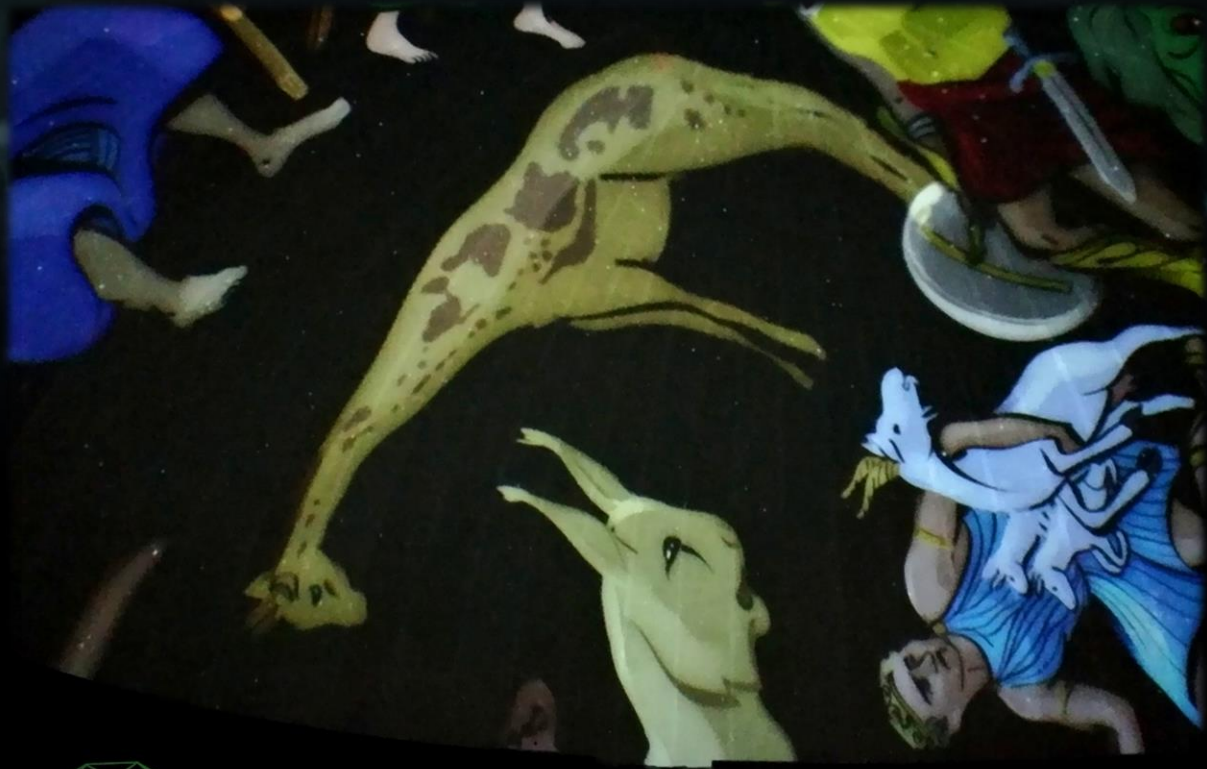
'Safe-Lock design'



Three year limited warranty



Dome Installation Examples



Series introduction video

<https://vimeo.com/336804489>

EMERALD™-FIXED Projection Systems

The EMERALD™ FIXED planetarium projection systems displays high-resolution imagery to fit the dome's geometry; presenting bright, colorful & sharp content. The result fills the dome with stunning images for a truly immersive experience.

These are powerful, complete planetarium systems which are designed for the needs of educators, school districts, science centers and universities. The Emerald™ systems are designed and built with emphasis on education as well as entertainment usages, using state of the art technology.

OPTICS WERE DESIGNED SPECIFICALLY FOR PLANETARIUMS

The Emerald™ dome optical system designed to produce aberration-free images with pinpoint stars all the way to the edge of the field of view.

Emerald™ optics virtually eliminates off-axis star coma, provide an exceptional-quality system at a fraction of the price of competitors.

A DIFFERENCE YOU CAN SEE

Compare the two images* of a star field below.

The first was taken with a competing optical design, the second with Emerald™ Dome Lenses optics. Superior edge performance not only creates rounder, more pleasing stars, but actually improves the resolution and audience experience. With Emerald™ MgF2 optical coatings, our optics gives you maximum light throughput across the widest visual spectrum.

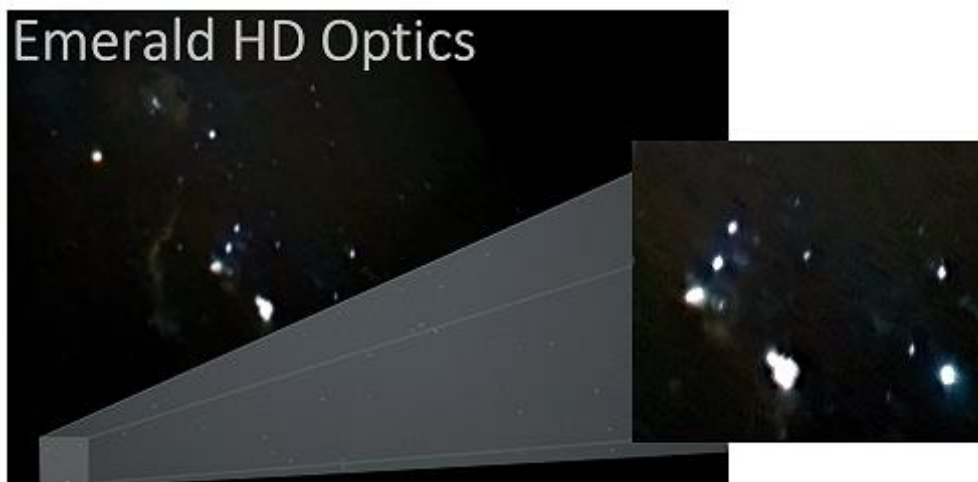


Fig. 1: Emerald™ Dome Lenses optics produces a consistent, sharp focus across the entire FOV

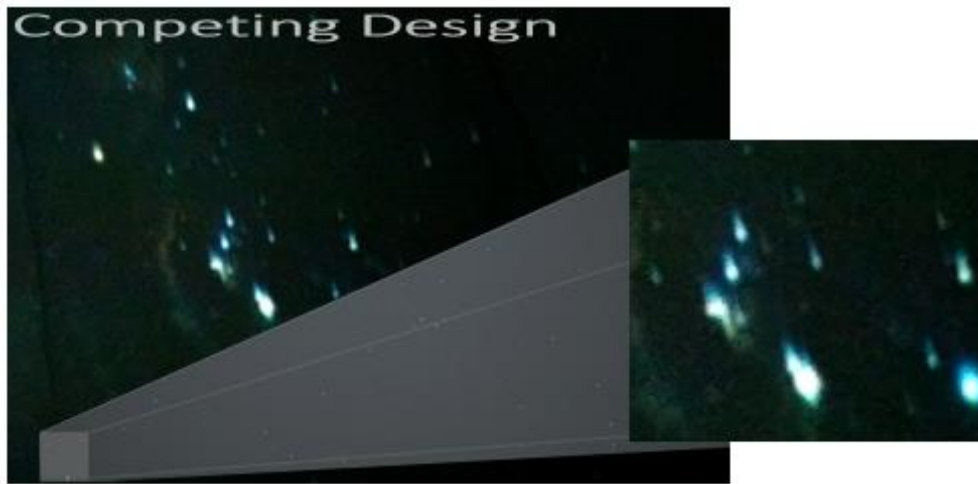


Fig. 2: The competing design, when focused on the axis, shows sharp stars in the center of the image, but dramatically out-of-focus stars (rings or lines) at the edges.

When focused on-axis, both images appear to be sharp in the center. But in the first image, as you examine the stars closer and closer to the edge, the stars become larger and less focused. Finally, at the very corners, the stars are so defocused that they appear smeared instead of pinpoints.

Now look at the second image. As you move from the center outward, the stars retain their focus from edge to edge, appearing as crisp, solid points of light.

IMPROVED PERFORMANCE FOR BRIGHTER, MORE DETAILED IMAGES

Superior edge performance not only creates rounder, more pleasing stars, but actually improves the resolution and limiting magnitude compared to projection units of equal initial properties/specs.

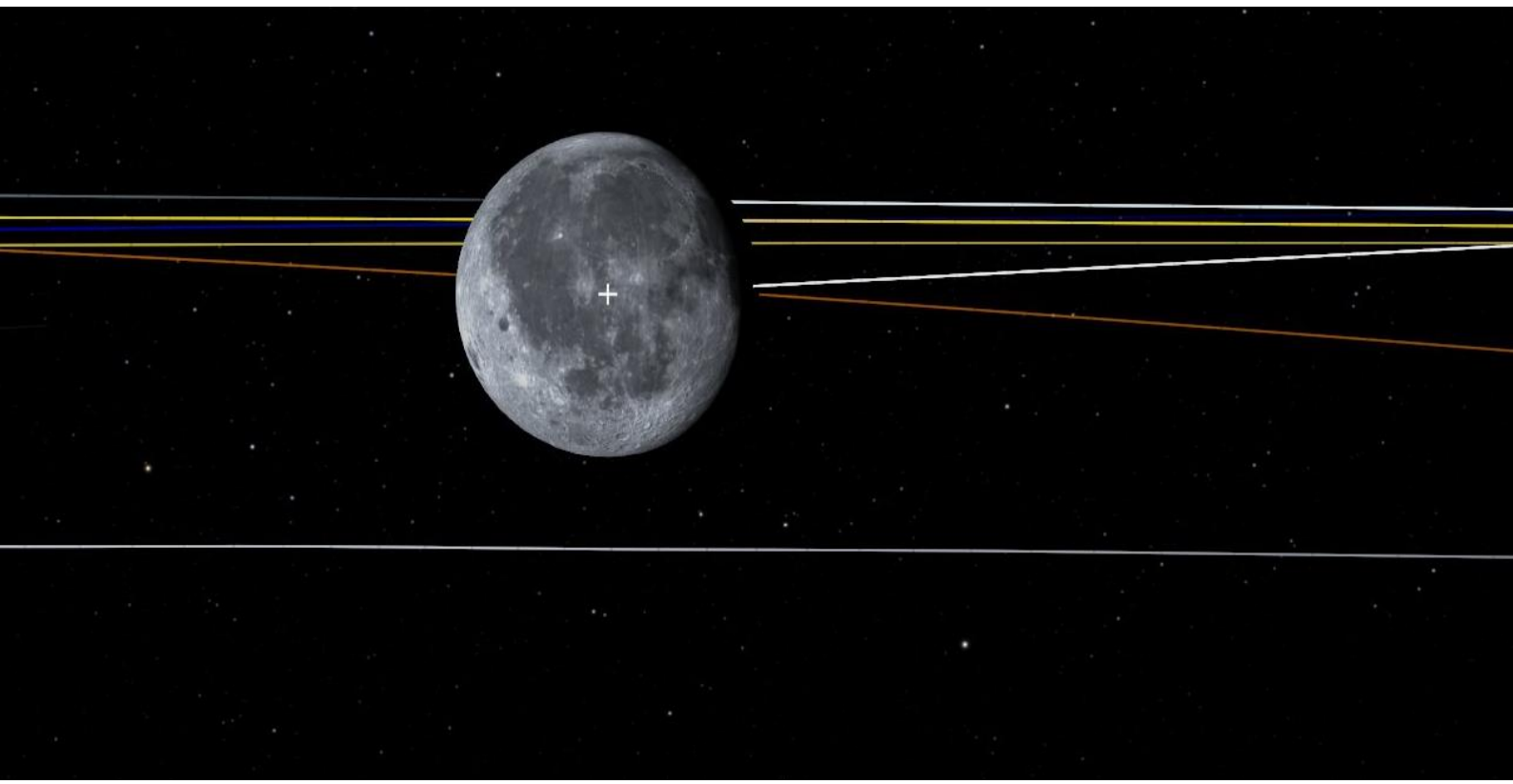
Emerald™'s high definition optics let you resolve smaller spot sizes all the way to the outer edge, revealing finer detail and greater contrast.

Our high-performance lens system employs sophisticated optical design to deliver true-to-life images. This innovative optical lens eliminates most image distortions, achieving optimal image clarity suitable for demanding applications.

Emerald™'s lenses are made from the highest-grade all-glass substrates, with metal barrel and CNC framework. The lens system comes with greater light penetration that guarantees long-lasting intensity, breathtaking clarity, sharpness, and color performance across the entire dome.



Our low dispersion lenses minimize chromatic aberration via a customized optical parameter and ultra-low reflective coating that prevent shape distortion while safeguarding perfect projection quality. The result is superbly delicate image quality that guarantees the best viewing experience.



ENGINEERED FOR MANY YEARS OF FLAWLESS OPERATION

Emerald FIXED systems are made of military grade components including a powerful FAST integrated computer/servers.

Technical support is just a click away: an Emerald rep. Connects from afar to manage system settings.



EMERALD™-FIXED CONTROL SYSTEM

Control & production station: HD screens, mouse and keyboards. Enables optimal control of the planetarium system, software and creation of custom full-dome content up to 8K as well as audio recording.

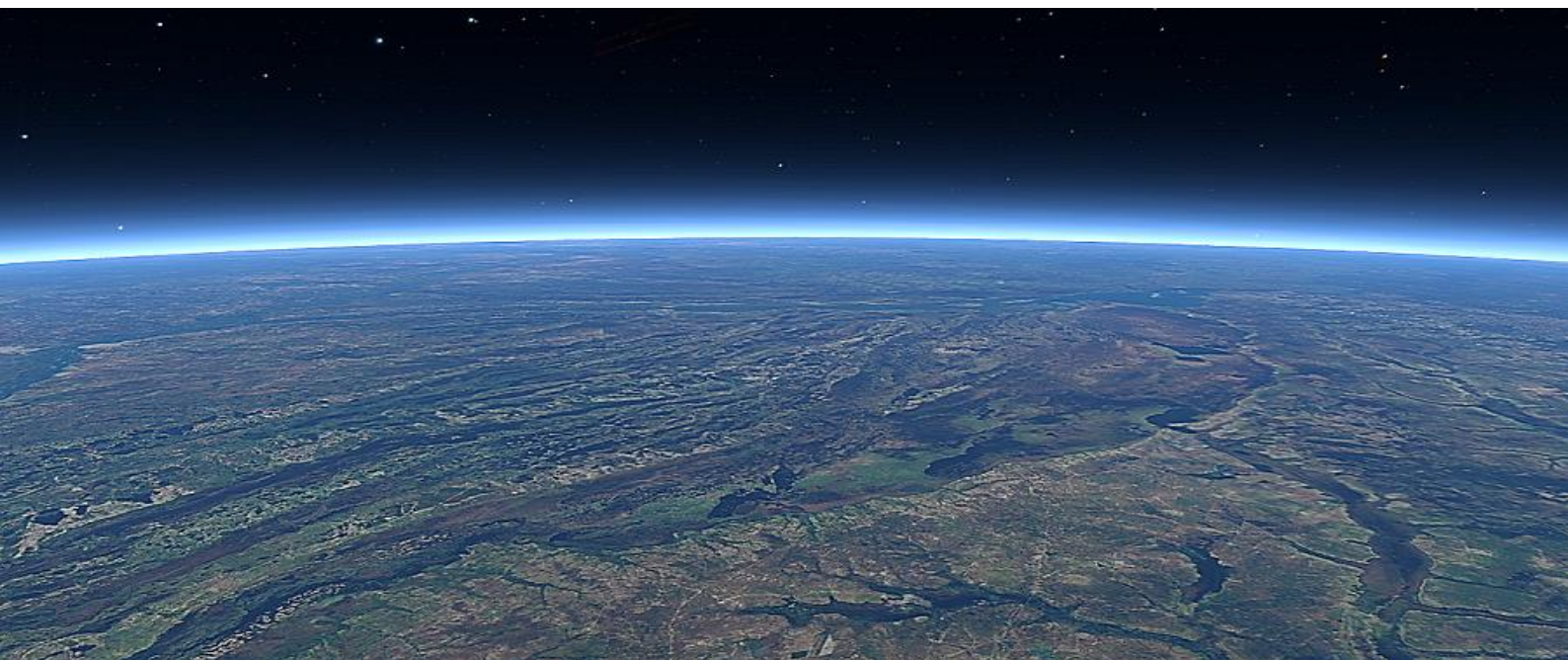
Remote-Dome-Console (RDC): Has an extremely intuitive and gesture-friendly User Interface which enables to control the planetarium content from around and even outside the dome.



EMERALD™-FIXED SOFTWARE

MULTIVERS²

- Enables to travel within our Solar System AND entire known universe
- Including the ability to fly outside our solar system
- Use the built-in shows - or create your own planetarium shows while embedding images, animations and your custom narration
- Includes High-Resolution data sets of the Earth, solar system and Deep-Space Objects for incredible detail
- Built in Scriptable capabilities
- Includes powerful 3D rendering engine



The Emerald™ projection planetarium system includes a full library of shows (ready for play scripts) from many fields of interest; such as Astronomy, Geology, Ecology and more. The Emerald™ fulldome system also includes advanced Planetarium simulation software.

Employs powerful, everyday tools to analyze and visualize complex data-sets, while containing the most up-to-date astronomical data.

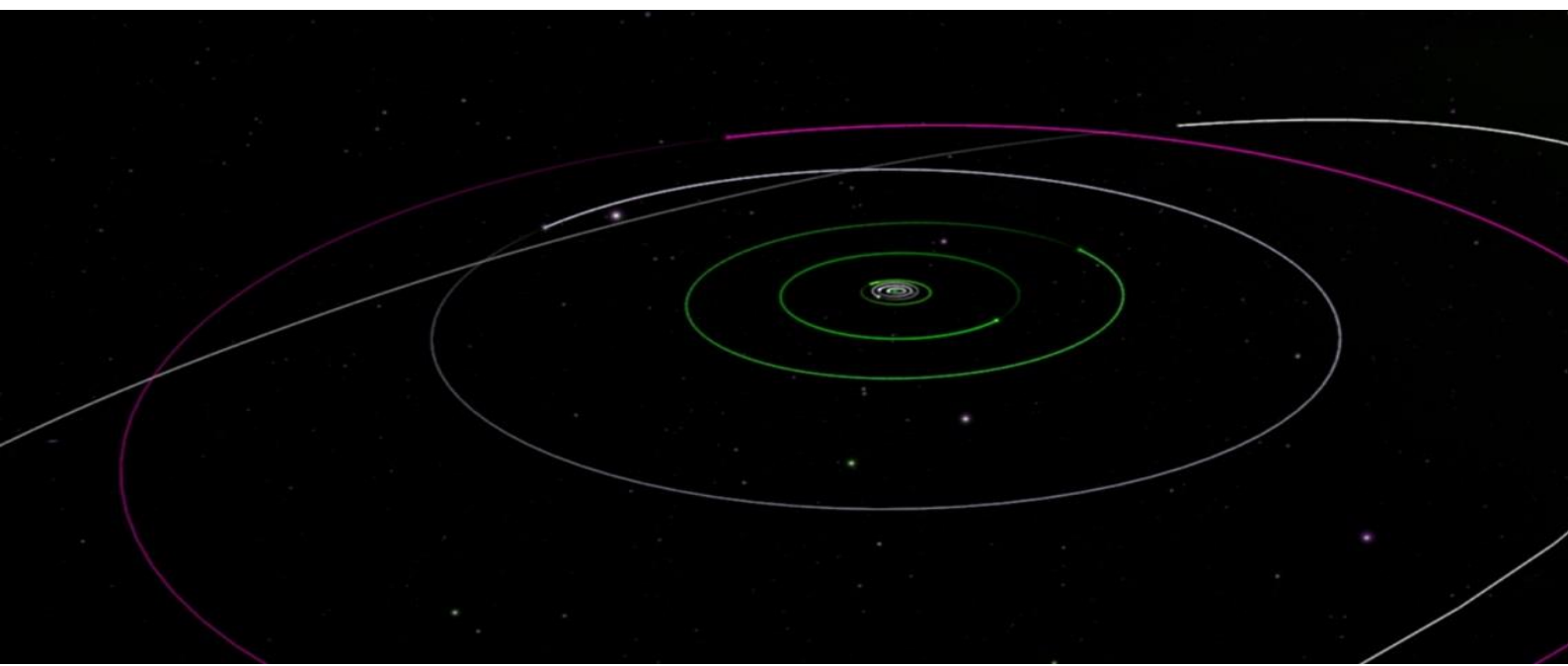
You can use the built-in fulldome shows - or create your own planetarium shows. While embedding images, animations and your custom narration. You can also download and share shows with the global planetarian community.



The planetarium software and planetarium platform, allow you to see the sky in a way you have never seen it before through individual exploration; multi-wavelength views; stars and planets within context to each other; the ability to zoom in and out; and the capability to create, search and view guided tours of the universe.

You can view the entire solar system in 3D with light and shadows created from the sun, and can explore the Earth and Mars in incredible detail. You also can watch planets orbit around the sun, and moons orbit around planets.

The visual experience engine delivers seamless panning and zooming around the night sky, with sky image that provides an unmatched panorama of the heavens. The app delivers seamless integration of scientifically relevant information, including multi-wavelength, multiple-telescope distributed image and data sets, and one-click contextual access to distributed Web information and data sources.



LIVE OBSERVATORY PLANETARIUM CONNECTION *(optional)*

"For the first time - the visitors can make new astronomical discoveries inside the planetarium!"

Our complete remote robotic telescope systems can send live deep space images directly into the planetarium dome!

The advanced Live-Observatory-Planetarium-Connection system - enables live-imaging presentation of the night sky in fulldome technology.

The L.O.P.C system allows direct connection to observatory-class fully remote-controlled telescopic system, enabling direct control, or autonomous operation ('tour') by premade scripts.

The connection can be established within the Emerald projection systems with L.O.P.C capability and require Internet connection.

The unique live-telescope system, developed by the Bareket observatory and Emerald™ planetariums serves institutions such as JPL, Berkeley, and NASA.

Today's computer technology, modern optics, and electronics offer an opportunity to provide you with access to research quality telescopes in both the northern and southern hemispheres.

The unique Emerald L.O.P.C offers live planetarium sessions with real space images, taken live during the planetarium session.

The planetarian can track an asteroid, take a snap shot of a nebula and even create an extra solar planet light curve.



Image: M51 the Whirlpool galaxy, taken using the Emerald's robotic telescope system

EMERALD™ Fulldome Calibration process

Automated projection calibration using a fisheye camera

Our Fulldome calibration process is as easy as it gets – our dedicated technicians will perform the calibration onsite for you, so you will be all ready to go from day one.

You can also perform the calibration at any given time by yourself –

Simply place the included fisheye camera in the center of your dome, connect it to the Emerald system and press the calibration button, then wait for the magic to take place (automatically).

After a few minutes your dome will be ready to present stunning views of the universe!

