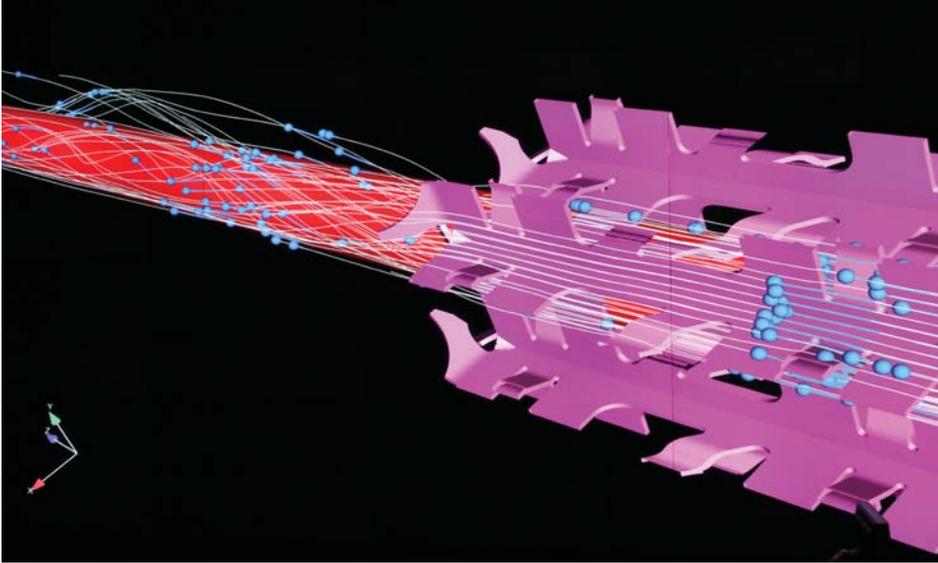


# Los Alamos National Laboratory “powers up” visualization with Christie technology

## Case study



▲ Simulation content projected onto LANL's Powerwall using 40 Christie Mirage WU-L WUXGA DLP 3D LED projectors.

## LANL pushes boundaries in data visualization

Los Alamos National Laboratory (LANL) has a long-standing history of developing science and technology in support of the United States nuclear deterrent. Through this work they also apply their knowledge and resources to solving national security and energy challenges. The laboratory brings together highly-trained scientists and engineers, providing them with leading-edge technology so they can do what they do best.

From the earliest days of translating data into images, to the work they do today, LANL has been at the forefront of advancing computer visualization technology. With this legacy, they are keenly invested in staying at the forefront of visualization technology. As well, based on the extremely large and complex

systems that they review and analyze, they need tools that provide detailed, 3D content, combined with a large-scale view – LANL achieves this with their Powerwall Theatre (PWT) using Christie® technology.

### Sparking new ideas

*“We do a lot of presentations, and there are also a lot of conversations that get sparked. That’s the true benefit of the Powerwall Theatre — it’s a venue for not only seeing and understanding, but also for generating new ideas.”*

Laura Monroe  
ASC Production Visualization Leader, HPC-5  
Special Projects Team Leader

#### Customer:

Los Alamos National Laboratory  
(LANL)

#### Location:

Los Alamos, New Mexico, USA

#### Industry/Market:

Visualization  
Government  
Defense

#### Requirements:

- Brightness
- High contrast ratio
- 3D stereoscopic support
- Ease of maintenance
- High frame rate
- Colour reproduction and balance
- Smooth and seamless appearance

#### Summary:

Los Alamos National Laboratory updated their Powerwall Theatre for sharper, brighter and smoother visuals using Christie Mirage WU-L WUXGA DLP 3D LED projectors, continuing their legacy of advanced data visualization.

#### Products:

- 40 Christie Mirage WU-L WUXGA DLP 3D LED projectors
- Christie AutoCal
- Christie ArrayLOC

#### Results:

The upgraded Powerwall Theatre gives LANL the extreme scale and quality of visualization that they require, enabling big data analysis in LANL's efforts to ensure the safety, security, and effectiveness of the U.S. nuclear deterrent.

## Reliable and user-friendly

Based on the success of LANL's first-generation Powerwall Theatre, they chose Christie Mirage WU-L WUXGA DLP® 3D LED projectors for the upgrade. LANL required technology that would be consistently reliable and also easy to use. The Laboratory selected Christie based on previous experience with the company, and Christie's ability to fully meet design specifications and user needs. As well, LANL was looking for a projection solution that would meet its criteria for brightness, color reproduction, sharpness, 3D stereoscopic support, high contrast and high frame rate. Monroe says, "We were very interested in a blended solution with a somewhat better light path so that the projected content would look smoother."

While Christie Mirage WU-L WUXGA projectors have a small footprint, they pack a lot of features that were important to LANL, including high-quality 3D at 120Hz. With LED illumination, the colors are exceptionally vibrant and the display is virtually maintenance-free. By stacking the Christie Mirage WU-L WUXGA projectors, LANL was able to achieve an even higher level of brightness required for the PWT.

In addition to brightness, the projectors also have built-in auto-calibration for color balancing with Christie AutoCal™ and ArrayLOC™, helping to optimize the content and provide a smooth and seamless appearance. When single projectors are arranged in a cluster, ArrayLOC allows them to become an intelligent array, "talking" to each other and automatically adjusting color and brightness across the whole display within seconds of being set up.

Using Christie projection solutions, LANL now boasts an even more compelling and breathtaking Powerwall Theatre. As Bob Greene, Visualization Scientist says, "There really isn't any substitute for being able to see this information presented in a way that a group of scientists, engineers, outside funders and high-ranking officials can all look at, at the same time, and see it in its full glory with the resolution and stereo."

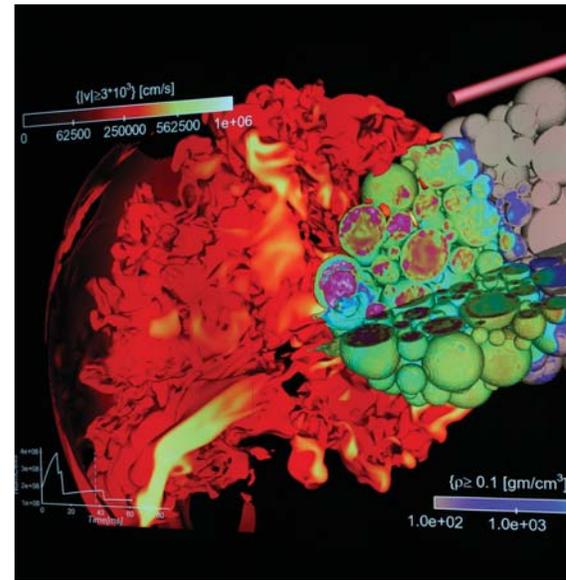
As the new wall goes up, it signals a firm commitment to push forward in technology, taking data visualization to new heights and equipping LANL in expanding their knowledge and efforts to advance science.

## What is a powerwall?

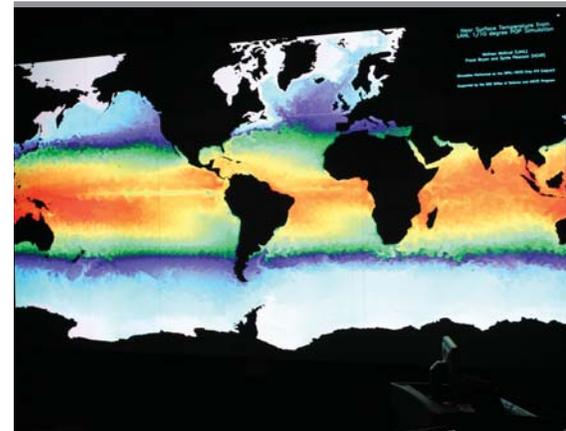
A powerwall is a high-resolution digital display in a large format. It's used for projecting data visualization or computer generated images on a large scale for improved collaboration, knowledge sharing and analysis. LANL's Powerwall Theater streams content from a large, integrated super-computer infrastructure, which is hooked up to various file and visualization systems, allowing users to easily switch between 3D stereoscopic video and high-resolution 2D data.

## Contact Christie

Contact us today to find out how your organization can benefit from Christie solutions.



▲ Detailed image of an asteroid.



▲ Thermal imaging of the ocean.

Photo credits: Los Alamos National Laboratory

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