

# Projections

Winter Solstice 2013

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## NASA ADMINISTRATOR CHARLES BOLDEN ADDRESSES SAINT LOUIS SCIENCE CENTER 50TH ANNIVERSARY CELEBRATION OF THE JAMES S. MCDONNELL PLANETARIUM



Chief administrator of NASA Charles Bolden was in St. Louis on Saturday, Dec. 7, to address friends and supporters of the Saint Louis Science Center at its biannual gala. Bolden is a former Marine aviator, test pilot, and astronaut who has led the space agency since 2009. In his keynote address, Bolden talked about St. Louis' role in the history of American space exploration, highlighting the industry's mutually positive investments in our local community.

The Science Center's 2013 gala celebrated the 50th anniversary of the James S. McDonnell Planetarium, a St. Louis icon and attraction designed by HOK co-founder Gyo Obata. A testament to James S. McDonnell's commitment to the St. Louis community, the Planetarium has shared the wonders of our universe and the marvel of modern flight with more than 19 million visitors.

"We are celebrating a St. Louis treasure," said Bert Vescolani, President and CEO, Saint Louis Science Center. "The James S. McDonnell planetarium is recognized as one of our nation's

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# A Note from Laura Misajet

Did a year just go by? I remember exactly where I was this time last year while writing this message. I was in the backseat of a car driving from Boston to Philadelphia reminiscing about 2012 and looking forward to 2013. It's so hard to believe a year has passed, and I'm facing that Janus moment again.

I saw a glimpse of the future during the recent regional conferences and SCISS Uniview Users Group, and the future looks great and exciting.

And speaking of past and future, Seiler Instrument and Carl Zeiss wish to congratulate Sheldon Schafer and his amazing staff at the new Peoria Riverfront Museum for organizing and hosting a wonderful GLPA conference this past October. The planetarium was originally located at the Peoria Lakeview Museum where Zeiss installed a ZKP4 optical/mechanical star projector and 5 SPACEGATE fulldome video projectors.



When the planetarium relocated to the newly completed Riverfront Museum, Zeiss removed the hybrid system from the Lakeview Museum and moved it over and reinstalled it into the brand new facility, changed the lenses of the ZKP4 to accommodate the larger dome size, and upgraded it to LED illumination. For the GLPA conference Zeiss brought over two of the highest resolution VELVET fulldome video projectors and swapped them out for the SPACEGATE. This allowed us to demonstrate the hybrid ZKP4 and VELVET system with Uniview for the GLPA attendees.



A special congratulations goes out to Sheldon Schafer, who will be retiring at the end of January after 41 years. Best of luck Sheldon for the future, and we will be watching your political career.

Happy New Year to everyone and see you at the meetings and demos in 2014!

*Laura*

## News and Notes

From Laura Misajet  
Sales Manager  
Seiler Instrument and Mfg. Co., Inc.  
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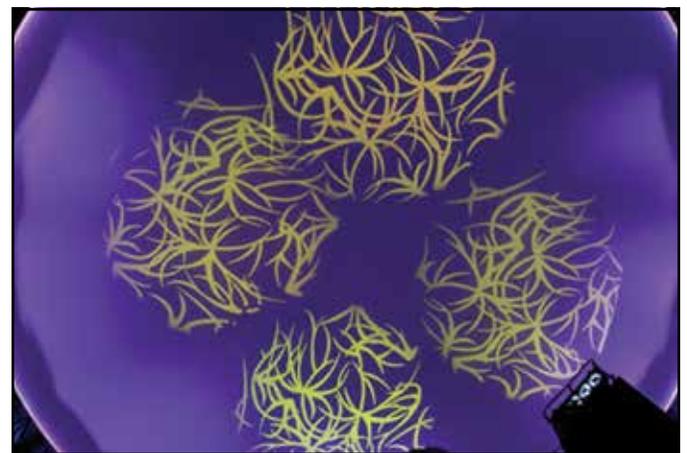
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## SAINT LOUIS SCIENCE CENTER 50TH ANNIVERSARY continued

leading educational facilities for exploring our universe. We strive to inspire the next generation of space explorers and scientists who will make those next journeys into space possible.”

Co-chairs for the gala event were Donna Wilkinson, president, The Wilkinson Group; and Dennis Muilenberg, president and CEO, Boeing Space, Defense and Security, The Boeing Company. Honorary chair for the event was John McDonnell, retired chairman of the board of McDonnell Douglas Corporation. The evening’s emcee was Maggie Crane, former KMOV news reporter and current communications director for St. Louis Mayor Francis Slay.



Presenting sponsors for the gala were Emerson and The Boeing Company. Other sponsors included: Centene Corporation, Edward Jones, John and Anne McDonnell, Monsanto Company, Electrical Connection, Mercy, Peabody Energy, Pelopidas LLC and PGAV.

Seiler Instrument showed its support for the Saint Louis Science Center as well. The event was attended by Eric Seiler (Chairman) and his wife, Elaine, and Rick Seiler (President and CEO) and his wife, Nancy.

Proceeds from the gala will support the Saint Louis Science Center’s commitment to provide the St. Louis community with exceptional educational programming, the latest technology in informal STEM inquiry, and unique visitor experiences. ■

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# GOOGLE LUNAR XPRIZE FULLDOME PLANETARIUM SHOW:

## Dome Show

Back To The Moon For Good, a full-dome planetarium show premiered in November 2013 and presents the fascinating story of the first privately-funded competition to land a robotic spacecraft on the Moon.

The show includes basic lunar science, speculation and humanity's future on the Moon, and a glimpse at the endeavors of the international teams who are vying for the prize, to be won by 2015. It is available for a no-cost lease to all digital theaters and portable domes.

## Some Background

The educational 24-minute Google Lunar XPRIZE full-dome planetarium show Back To The Moon For Good chronicles teams around the world competing for the largest incentivized prize in history, by landing a robotic spacecraft on the Moon for the first time in more than 40 years. In case you haven't heard, the Moon is trending again... and in a big way. Like in the glory days of the 1960s and 1970s, our big white space neighbor is enjoying the attention of lunar explorers. Only this time, they're going back to the moon for good.

To win the Google Lunar XPRIZE, a team must land a robotic spacecraft on the Moon, navigate 500 meters over the lunar surface, and send video, images and data back to Earth. This global competition is designed to spark imagination and inspire a renewed commitment to space exploration, not by governments or countries – but by the citizens of the world.

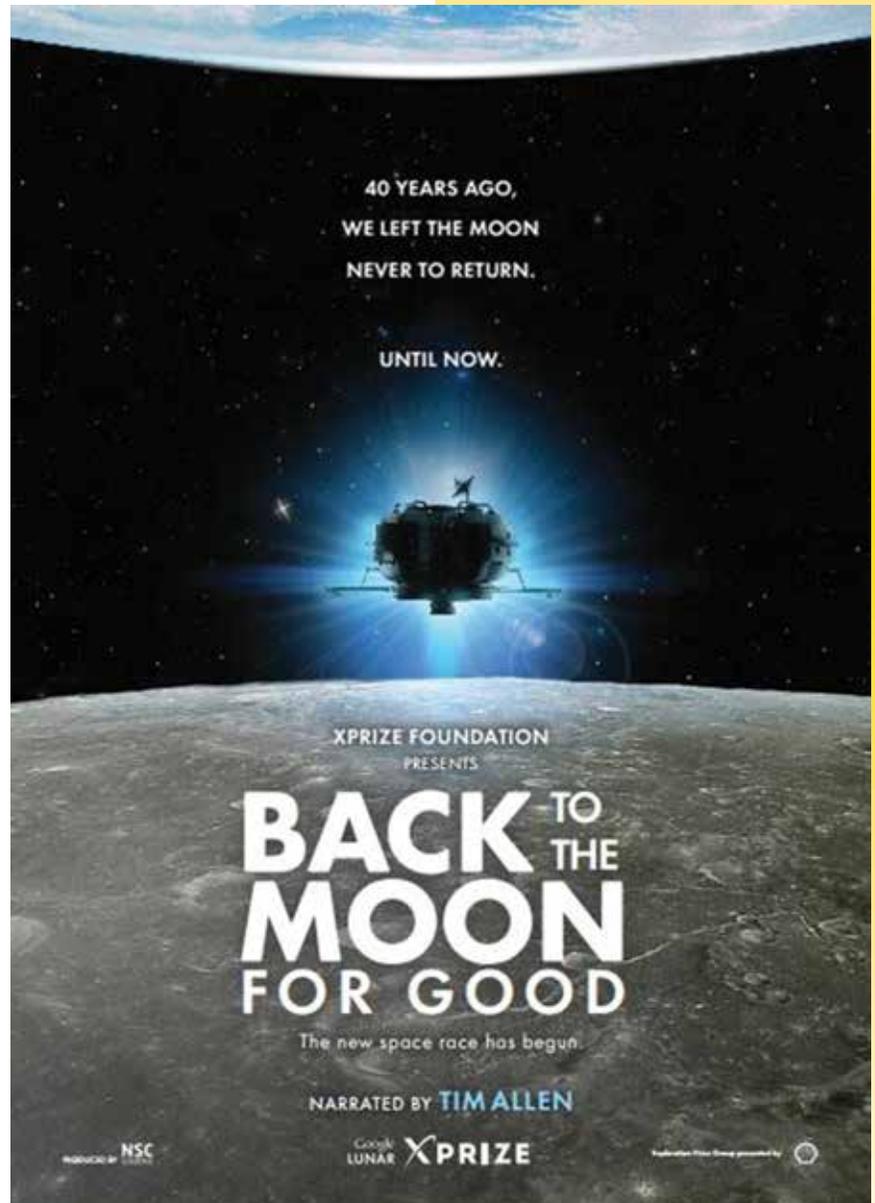
## Show Synopsis

The show opens with the first era of space exploration in the late 1960s and early 1970s. We see what that era of landers and orbiters taught us about our nearest neighbor including the discovery of the Moon's origin, composition, structure and the accessibility of raw materials on its surface.

The Google Lunar XPRIZE is introduced as the largest incentivized competition to date, designed to democratize space and create new opportunities for eventual human and robotic presence on the Moon. We see the engineering and innovation steps taken by the internationally distributed teams competing to land a spacecraft on the Moon and vie for additional prizes. We highlight the human spirit of competition and collaboration as teams take on this audacious challenge.

Who will win the \$30 million Google Lunar XPRIZE? The audience is taken through a successful launch, landing and lunar surface travel. The show ends with a stunning glimpse of a plausible scenario for our future on the Moon.

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## **DOME SHOW LICENSING**

### **Availability and Leasing Information**

The show will be available in early November 2013 for a no-cost lease. Host venues must sign a full performance license agreement and agree to provide attendance numbers, demographics and copies of promotional materials and press to the Google Lunar XPRIZE. A sign up form to receive the show license is included below.

The Google Lunar XPRIZE will forward signed license agreements to NSC Creative to manage the processing of dome masters, and the links for portable dome downloads. Fixed-dome theaters will pay NSC Creative U.S. \$350 for the hard drive and shipping. Portable domes will receive information on downloading the show for free.

Theaters will be responsible for slicing the dome master to the specifics of their dome. NSC Creative will direct those needing assistance configuring the dome master to appropriate vendors. Files will be available in a selection of formats suitable for domes from 4K resolution to portables.

### **Production Team**

Robert K. Weiss (Executive Producer) brings more than 20 years of Hollywood experience to the writing and production of the show. Mr. Weiss is the Vice Chairman and President of XPRIZE.

Alex Hall (Executive Producer) has produced and directed fulldome planetarium shows during her tenure at science centers in the United States and the United Kingdom. Ms. Hall is the Senior Director of the Google Lunar XPRIZE.

Tim Allen (Narrator) is an American comedian, actor, voice-over artist and entertainer, known for his role in television sitcoms, and popular films including the Toy Story film series (as the voice of Buzz Lightyear).

Ryan Wyatt (Writer) has written four fulldome planetarium shows. Mr. Wyatt is the Director of Morrison Planetarium and Science Visualization at the California Academy of Sciences.

Rhian Sheehan (Sound and Music) is an award winning New Zealand composer and recording artist. He has composed a variety of film and television projects, as well as the scores for six fulldome planetarium shows.

NSC Creative (Producer) is one of the leading fulldome show producers in the world, with more than ten years of experience creating popular shows leased internationally.

### **Audio Files and Multilingual Narrations**

Audio will be provided in English and non-narrated formats suitable for regionalization by the end user. Due to the generosity of several host theaters, Back To The Moon For Good will be translated into Spanish, French, Catalan, Portuguese, German, Croatian and Hungarian. Theaters wishing to receive narrations in any of these languages will have access through NSC Creative. ■

## Uniview Users Group, Vancouver Canada December 2013

The Uniview Users Group just concluded from the H.R. MacMillan Space Centre in Vancouver Canada. The theme for this year's meeting was Progress.

It started with a day of demonstrations in the dome of what is currently available and just around the corner. The second day was on longer term progress and discussions on the direction where the fulldome community is headed.

There were 35-40 attendees from 20 institutions that shared their content, use cases, collaborations, and predictions for the future. Some of the exciting additions to Uniview are three camera modes, the familiar orbital view, the new surface mode and sky view. Now you can fly down to a location on the earth and enter sky view so the camera will tilt up toward the sky above and Uniview becomes a traditional digital planetarium from any place on earth. The new additional of customized buttons via the built-in server allows a user customizable GUI (Graphical User Interface).

Another highlight came from Mark Subbarao from the Adler Planetarium. He announced the new IPS Science and Data Visualization Task Force whose job it is to discover mechanisms to expedite data acquisition, getting more data to the domes faster and with more efficiency. When I asked Ryan Wyatt his thoughts, he said, "I look forward to a robust implementation of the AVM (Astronomy Visualization Metadata) standard in Uniview in the very near future and I applaud the work Mark Subbarao and the IPS Visualization Task Force have begun."

The most exciting thing I saw presented on the dome was "Neurodome" presented by Patrick McPike. Working closely with a Neuroscientist from New York, Patrick presented data from brain scans and showed various levels including brain structures all the way down to neuron pathways. It was an amazing demonstration of new kinds of detailed data that can be shown through Uniview and opens the doors to many disciplines. According to Dr. Ka Chun Yu from Denver, "The Neurodome shows the future of not only visualization technology with the use of advanced shaders, but also one direction that the industry can head towards: showing the complexities of human biology and the mechanics of life itself." Look for more details on Neurodome in our next Projections Newsletter.

Overall, the Uniview Users Group was a huge success and extremely valuable experience. As Daniel Arnberg from SCISS put it, "A nice thing about these meetings is that it's always a dialog as opposed to a lecture and everyone here participates. SCISS gets to see the user created content that we don't always get to see."

For more information on SCISS Uniview go to [www.scalingtheuniverse.com](http://www.scalingtheuniverse.com) ■



Dinner at the Top of Vancouver's rotating restaurant with Dr. Ka Chun Yu, Patrick McPike, Daniel Arnberg, Paul Sterns, and Ryan Wyatt.

*Photo: Laura Hammonds Misajet*



The city of Vancouver Canada taken from the second floor of the H. R. MacMillan Space Centre Planetarium.

*Photo: Laura Hammonds Misajet*

## LIGHTING UP THE PLANETARIUM - AGAIN! COLORED LIGHTS TO ILLUMINATE THE JAMES S. MCDONNELL PLANETARIUM

On December 12, The Saint Louis Science Center lit up the James S. McDonnell Planetarium with a state-of-the-art LED system that illuminates the building's iconic shell in stunning colors for the first time in nearly four years.



"We think this is a wonderful way to celebrate the 50th anniversary of the Planetarium and provide a reminder of this community's iconic science learning resource," said Bert Vescolani, president and CEO, Saint Louis Science Center. "We are restoring the original lighting concepts but with updated technology that is more energy efficient and reduces maintenance." In addition to saving money and energy, the new system provides an extraordinary array of colors – as many as 16 million color variations, images and movement.

The original lighting system, installed in late summer of 2002, consisted of 12 pole-mounted lighting fixtures set around the Planetarium that worked off colored lenses with a mechanical element to change colors. The system allowed for a single color, multiple bands of color and even custom colors for special events such as baseball or hockey playoffs. At 800 watts each, the lamps consumed a lot of energy and had an average life of only 3,000 hours. Lamps were replaced annually at a cost of about \$3,000. By 2007, the lighting system was outdated and failing to produce color. "It simply wore out," said John Wharton, managing director of facilities. "We limped along with just white lights on the Planetarium's shell for a few years."

The new system consists of 24 color-wash LED lights mounted on the repurposed original 12 poles. There are six gobo projectors that can produce moving or static images, patterns and pictures. The LED system is more energy efficient. "From 800 watts a pole down to 250 watts, that's a 70 percent reduction in energy," said Wharton. The new lights are more affordable and

are expected to last 10 to 12 years with little or no maintenance. The Science Center staff did most of the design and installation work. The entire project, including fixtures, cost \$100,000.

This is one of several innovative accomplishments recently undertaken by the Science Center to advance sustainability. The Science Center is being recognized as a Circle of Excellence award winner by the St. Louis Regional Chamber at the 2013 Green Business Challenge ceremony.

### Saint Louis Science Center

The Mission of the Saint Louis Science Center is to ignite and sustain lifelong science and technology learning. It is one of the top 15 science centers worldwide and was named one of the "Top 10 Science Centers for Families" by Parents magazine. The Saint Louis Science Center complex includes a four-story OMNIMAX® Theater, LEED® certified Boeing Hall and the James S. McDonnell Planetarium, celebrating its 50th anniversary in 2013. For more information about the Saint Louis Science Center, please visit [slsc.org](http://slsc.org)

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### The Best of Both Worlds!

The Zeiss ZKP4 star projector delivers fiber optic stars, the same technology in the larger Starmaster and Universarium, now with brilliant LED high intensity lamps for domes 20 - 50 feet.

### Introducing: Velvet Duo FullDome

for domes from 6 to 14 meters with either center or peripheral projection!

The two projection types work together as one, providing a complete planetarium solution.



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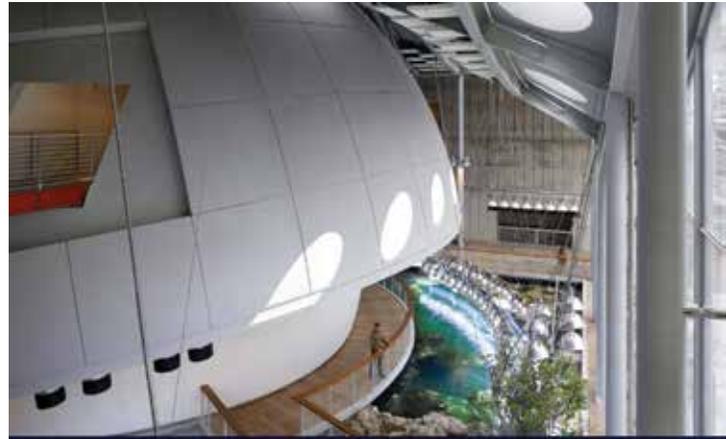
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## UPCOMING EVENTS:

**Morrison Planetarium Open House, California Academy of Sciences**  
55 Music Concourse Dr.  
San Francisco, CA 94118

Join them on  
January 24 -25, 2014

See Morrison Planetarium Productions, get a go-behind-the-scenes tour, learn how they use their Real-Time tools such as Uniview, and participate in a WorldWide Telescope workshop.



**Morrison Planetarium Open House**

JOIN US IN SAN FRANCISCO ON **24-25 JANUARY 2014**

- See Morrison Planetarium productions *Earthwalk: Evidence of a Barren Planet* and *Life: A Cosmic Story* in their original setting.
- Participate in a **WorldWide Telescope workshop** hosted by Jonathan Fay and Doug Roberts from the Microsoft Research team.
- Get a behind-the-scenes tour of the **Academy's Visualization Studio** hosted by Ryan Wyatt, Director of Morrison Planetarium and Science Visualization.
- Arrive an evening early and enjoy **NightLife**, the Academy's interactive weekly exhibits and science event.
- Learn from Academy staff how they use **real-time tools** including WorldWide Telescope, Uniview, and DigitalGlobe to create programs for a variety of audiences.

CALIFORNIA ACADEMY OF SCIENCES Microsoft Research WorldWide Telescope  
www.worldwidetelescope.org

## Join us at the IMERSA Summit

March 6 - 9, 2014 in Denver, Colorado.

There will be many workshops on such topics as fulldome production techniques, 360 degree cameras, and 360 degree audio to name a few.

Presentations on innovative tools and technologies, standards and "Best of Fest" film screenings will be highlighted.

**IMERSA** Immersive Media Entertainment, Research, Science & Art

**Welcome to the World of Dome Theater**

Join the IMERSA community in Denver Colorado

**March 6-9 2014**

IMERSA is an international non-profit professional organization that celebrates and promotes immersive and fulldome media for education and entertainment in planetariums, schools, museums, cinemas, events, attractions...  
IMERSA.org

**IMERSA Summit 2014**

Workshops: March 6-7    SUMMIT: March 7-9  
DENVER MUSEUM OF NATURE & SCIENCE  
DENVER FILM SOCIETY - SEI FILM CENTER    IMERSA.org

**Workshops**  
Spherical photography  
Fulldome film production  
360 audio  
Fulldome cameras  
Distribution practices

**Presentations**  
Innovative products  
Best of Fest film screenings  
Interchange standards  
Tools and technologies

**Networking**  
Connect with delegates  
Meet our affiliates  
Share your visions