Colorado Springs man's 'spaceship' bound for solar eclipse and beyond

By: Seth Boster

August 15, 2017

Dimitri Klebe, the president of Pikes Peak Observatory, explains how the Mobile Earth & Space Observatory works Tuesday, Aug. 15, 2017, outside the MESO office in Colorado Springs. Klebe will be part of a team that will drive the mobile observatory to Nebraska to participate in the Citizen CATE project that will document the solar eclipse on Monday. (The Gazette, Christian Murdock)

"Star Wars" arrived in theaters to inspire a budding scientist.

"I always wanted to look cool in a spaceship," said Dimitri Klebe, the scientist who 40 years after the movie grins about his latest project.

It won't fly but is nonetheless big and, in a way, can explore the galaxy. Most important, the Mobile Earth & Space Observatory, or MESO, can inspire a new generation of astronomy enthusiasts.

"I think it's gonna be a game-changer," said Klebe, a former Colorado College professor and longtime space educator at the Denver Museum of Nature & Science.

For years he pushed the idea at the museum: A traveling classroom, a laboratory on wheels, would take pressure off exhibits that field-tripping school kids never had time to really understand. Students could experiment in a mobile observatory over the span of days. And it could reach remote schools out of a museum's reach, students who don't have the opportunity for such a field trip.

The idea never took at the museum, said Klebe, who was laid off in January after 14 years.

"That's when I (thought), 'OK, I've gotta devote my time to getting this ready. I've gotta get this ready for the eclipse."

And there it was Tuesday in Colorado Springs, ready for the celestial event of a lifetime.

Dimitri Klebe, the president of Pikes Peak Observatory, walks through the Mobile Earth & Space Observatory Tuesday, Aug. 15, 2017, outside the MESO office in Colorado Springs. Klebe will be part of a team that will drive the mobile observatory to Nebraska to participate in the Citizen CATE project that will document the solar eclipse on Monday. (The Gazette, Christian Murdock)

Locals came to envy Klebe's creation before he left for Nebraska, one of 14 states that on Monday will be in the solar eclipse's "path of totality." He will be in the 26-foot 1976 GMC RV that he turned into MESO.

The back walls slide to reveal an open-air lab, with a telescope mount at its center. Toward the front, two 65-inch flatscreens are posted to relay data. Red LED lights line the interior - lights that won't deter night-time viewing.

Klebe, who lives in a house he built outside Woodland Park, is an astrophysicist who also happens to be a carpenter.

"He loves science, and he loves working with his hands," said Geoff Lawrence, a former graduate school colleague whom Klebe recruited to ride along for MESO's launch. "Every aspect of this vehicle is him. It's a labor of love, the educational aspect and all this that he built so much of by hand. It's perfect for him. It's like the culmination of all the things he likes to do."

For Klebe, an even greater culmination would come with an observatory atop Pikes Peak - an initiative he's led for two decades with the National Space Science & Technology Institute, the Springs-based nonprofit.

Bob Sallee, the institute's board chairman, said a special use permit will be submitted to the U.S. Forest Service within the next 60 days. Proposals for the observatory, which Sallee said would cost close to $2 million from grants and donations, have coincided with plans for the next Summit House. Construction on the complex is expected to begin next year.

Agnes Busch, 90, the former owner of the 1976 GMC recreational vehicle that was converted into the Mobile Earth & Space Observatory, watches as people tour the mobile observatory Tuesday, Aug. 15, 2017, outside the MESO office in Colorado Springs. A team from the Pikes Peak Observatory that will drive it to

Nebraska to participate in the Citizen CATE project that will document the solar eclipse on Monday. (The Gazette, Christian Murdock)
"MESO is one element of the Pikes Peak observatory," said Sallee, as the telescope at 14,115 feet would bounce views and data to the RV.

The organization's mission is to advance science, technology, engineering and math (STEM) education. Klebe intends to drive MESO around Colorado, bound for schools interested in programs he has to offer.

But first, his "spaceship" has a mission in Nebraska.

He'll join the Citizen CATE (Continental-America Telescopic Eclipse) Experiment, the nationwide effort involving people spread across places where the moon will totally block out the sun. Klebe has one of the 68 identical telescopes that will be set up from Oregon to South Carolina.

Totality will last about two minutes in every place under the path, and the goal is to collect images from every place possible, to show the scene over its entirety, beginning at 10:18 a.m. Pacific Time and ending at 2:47 p.m. Eastern Time.

It is a first-of-its kind experiment for a coast-to-coast phenomenon that hasn't occurred in the U.S. in 99 years.

Total solar eclipses happen about every 18 months, commonly over areas of the globe that are difficult to reach, such as the Arctic or far seas. Klebe said he's never seen one. He's heard the gasps of people in videos. He's heard tales from a late friend whose eclipse pilgrimages included the Galápagos Islands. "You just gotta see one," the friend would say, falling short of explanation.

"I'm ready to see what it's all about," Klebe said.

He owes thanks in part to Agnes Busch, 90, who was on hand to see MESO's take-off Tuesday. She lent the converted RV that she and her husband, Val, drove around the country. Val died in 2013.

He would have been proud to see it now, said Busch, who watched a soon-to-be first-grader tour MESO.

"It's gonna have a good life," Busch said.

Related:

The day in 1878 when Colorado Springs basked in the glory of a total solar eclipse

The day in 1878 when Colorado Springs basked in the glory of a total solar eclipse

By: Seth Boster

August 14, 2017 *Updated: August 15, 2017 at 12:40 am*

An August, 1878 cover of Harper's Weekly featured the total solar eclipse over the Rocky Mountains. Colorado Springs was among places that hosted tourists and scientists on July 29, 1878.
Steve Ruskin looked out at the audience filling a room in Colorado Springs' downtown library. Every chair was taken, along with the extras brought out from storage.

"I don't know if you heard," joked Ruskin, the local science historian, "but there's an eclipse coming."

Monday, the nation will look to the skies as the moon creeps toward the sun. From the mountains of Oregon and Wyoming to the plains stretching from Nebraska to South Carolina, the hot star will be completely concealed. Darkness will shroud the land for minutes, immersing parts of 12 states in the "path of totality."

Such a spectacle spanning the coasts hasn't occurred since 1918, hence the masses dubbing this "the Great American Eclipse." And just as there is heated anticipation to witness the cosmic phenomenon, so too is there a craving for knowledge.

That's what brought people to the library, to hear Ruskin address the 1878 phenomenon over the Rocky Mountains. The book he released this summer is called "America's First Great Eclipse."

"Locals, tourists, astronomers were about as crazy for a total solar eclipse then as we are today," Ruskin said. "The frenzy, the mania was pretty similar."

The eclipse will only be partial over Colorado Springs this year; the sun's crescent will provide some light. The world's devoted "eclipse chasers" are flocking elsewhere, to cities and towns where hotels have long been booked, where whole businesses have been built around the event, where organizers have been hired or appointed to handle media and the hordes expected to double or triple populations. (For Coloradans heading to Wyoming or Nebraska, the Colorado Department of Transportation has told drivers to plan on heavy highway traffic this weekend.)

In "America's First Great Eclipse," Ruskin, a Colorado Springs native, tells of the city being "overrun" 139 years ago. In the days leading up to July 29, Chicago and St. Louis added cars to their railways in attempts to meet the demands of people seeking to head west. They were eager to visit Colorado, which was 2 years old as a state and ready to showcase itself.

Among the waves were some of the globe's most renowned astronomers, curious to behold the atmosphere well above sea level. The 1878 eclipse, Ruskin's book says, helped set the precedent for today's research trends, with many mountaintops home to observatories.

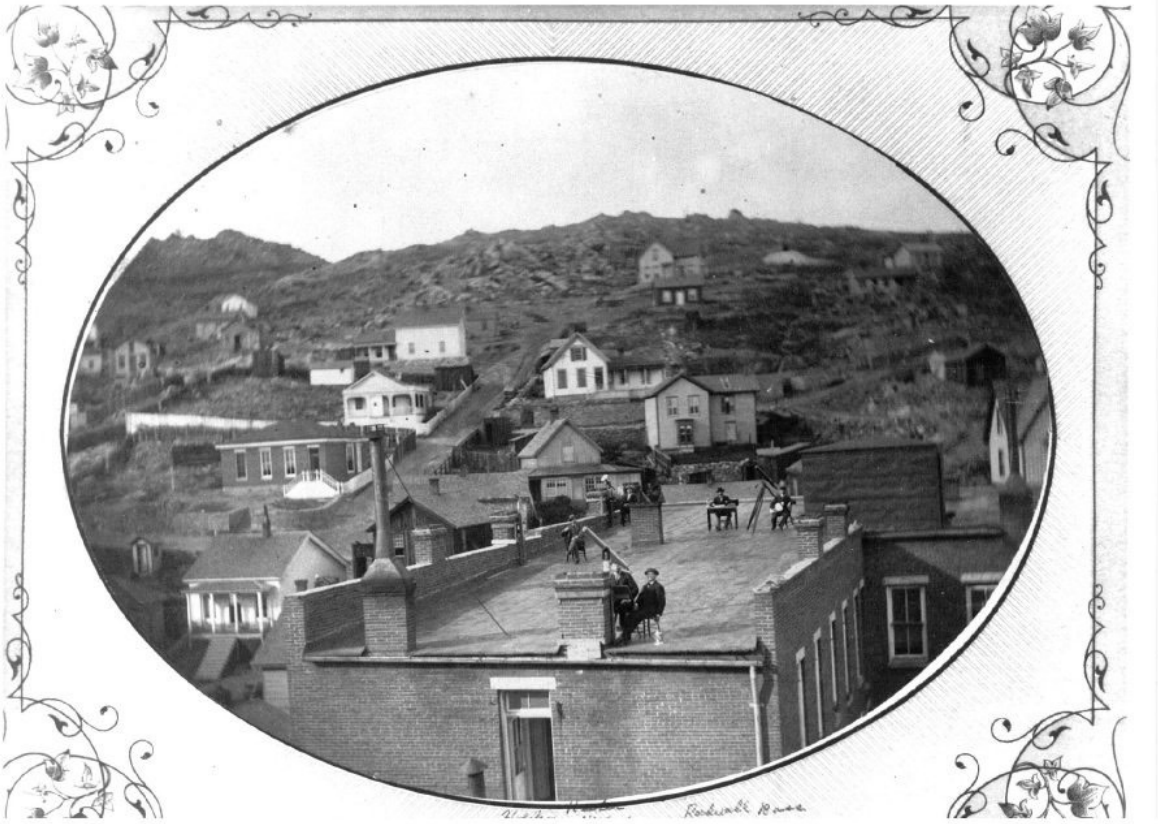
"It brought the world's best astronomers to the Rockies to compare notes," the author said. "It was the first time in history that so many astronomers observed together at high altitude."

They would describe their experiences "like seeing into the heart of the solar system," Ruskin said. Perched atop peaks, they saw ranges overtaken by a massive shadow. They saw clearly what some hope to observe Monday afternoon: something like a black hole, flanked by twinkling stars and planets.

As a former mountain bike guide on Pikes Peak, Ruskin's interest was piqued as he researched Samuel Pierpont Langley's experiment in 1878. The famed scientist had burros haul up the U.S. Naval Observatory's bulky, brass telescope to the summit of America's Mountain. He pitched a tent and battled altitude sickness, along with winds, hail and intense sunshine.

His mission to study the sun's corona was a success, Ruskin writes. The scientist's illustration of the flower-like streamers of particles around the eclipse "was arguably the most impressive rendering out of all the images made in 1878," Ruskin writes.

Down in civilization, people observed through shards of glass that they held over an open flame - the smoky optics before today's specially made protective glasses. They watched from church windows - spots that came at a price. Ruskin found newspaper reports of hotel owners scouting horse stables they could rent out, along with the space they had in dining rooms and on top of billiard tables.



In Colorado Springs, an entrepreneurial man sold discounted coffins to the gathered doomsayers - another bit of research enjoyed by Ruskin, who has studied ancient civilizations that felt the eclipse was the wrath of gods or some angry, supernatural force. According to secondhand accounts from 1878, Native Americans in the area shot at the approaching moon.

The next total eclipse predicted for the U.S. - and to be seen in Colorado Springs - will be on Aug. 12, 2045. It's easy to imagine Garden of the Gods as it was for a day in 1878: crowded. The park became like a tent city that year, with one occupant being U.S. Sen. Henry M. Teller of Colorado. He was joined by other dignitaries, who Ruskin notes shared space with blacksmiths, shepherds and newspaper boys.

"It's not really a political thing," he said of the eclipse, which he plans to view from Cheyenne, Wyo., alongside his two young daughters. "I think maybe there's a chance for people to - I know it sounds corny - but forget things for a while. They'll look at the same cool event, awesome no matter what you believe or who you are."