Mobile observatory set up in Sutton for eclipse

Andy Raun

Aug 20, 2017 Updated Aug 21, 2017

The Mobile Earth and Space Observatory, a converted recreational vehicle shown here on Sunday afternoon, will be open for visitors through Monday night on the Sutton Public Schools campus in Sutton. *Andy Raun*

ANDY RAUN araun@hastingstribune.com

SUTTON — The Mobile Earth and Space Observatory that arrived here early Sunday morning offers all visitors a glimpse of the heavens and young people a glimpse at possible careers in science.

MESO, a converted 1976 GMC recreational vehicle 26 feet in length, was completed just recently and is on its first deployment in honor of today's total solar eclipse, said Robert J. Sallee, chairman of the board of directors of the National Space Science & Technology Institute headquartered in Colorado Springs, Colo.

“This is the maiden voyage,” Sallee said. “We had intended to have it done in October, but the eclipse compelled us to get this out on the road.”

Mechanical problems delayed the vehicle’s arrival in Sutton by several days. The vehicle and scientists finally reached town about 3 a.m. Sunday and are planning to remain at least through Monday night, said Marc Straub, executive director of Cool Science, also of Colorado Springs, who is helping to staff the vehicle.

Visitors of all ages are welcome in the daytime and evening hours. MESO is parked on the campus of Sutton Public Schools, near the football field.

NSSTI and Cool Science, both nonprofit organizations, aim to help get young people excited about scientific pursuits, concentrating mainly on Colorado communities but now beginning to move into neighboring states, as well.

In the MESO project, they are working with Solmirus Corp., a Colorado Springs company that specializes in designing, building and installing high-level digital imaging instrumentation, and the National Solar Observatory.

The MESO vehicle includes a weather station, weather balloon, photovoltaic panels, satellite connectivity, a transportable planetarium and digital globe. The unit features a slide-off roof.

On Sunday afternoon, astronomer Dimitri Klebe, president and co-founder of Solmirus Corp., led an orientation session for a group of Denver high school students who had just arrived in Sutton to help work with visitors to MESO while it is in town.

“They wanted to be here for the eclipse,” Straub said, and probably will be busy around midday Monday as Sutton students come out of school to witness the eclipse and visit the mobile observatory.

Klebe has several telescopes on hand as well as his company's flagship instrument, the All Sky Infrared Visual Analyzer, or ASIVA, which is a multipurpose instrument for sky measurements and has been deployed around the world.

MESO is in Sutton, Straub and Sallee said, because it is part of the Citizen CATE Experiment aiming to capture images of the sun's inner corona during the eclipse and Sutton is one of the designated recording sites. Ravenna and Beatrice are among other recording sites in southern Nebraska.

Science organizations have spanned out across the 2,500-mile path of Monday's eclipse totality path — it stretches from Oregon to South Carolina in the United States — and will make thousands of high-resolution, rapid cadence while light images using 68 identical telescopes. Later, the images — around 1,000 from each recording site — will be to be strung together in a 90-minute movie on the corona, a part of the solar atmosphere that is difficult to study under normal circumstances due to the brightness of the sun's surface.

CATE stands for Continental-America Telescopic Eclipse and is a joint project involving volunteers from more than 20 high schools, 20 universities, informal education groups, astronomy clubs across the country, five national science research laboratories and five corporate sponsors.

But if MESO has a serious research mission in Sutton, the scientists and volunteers also have plenty of time to make science accessible and enjoyable for those who pay a visit. Young children even have a chance to make monster soap bubbles and create their own "dippin' dot" frozen treats in a bowl of liquid nitrogen.

Straub, a physicist, started Cool Science nearly 10 years ago and works with fellow scientists, engineers, and others who volunteer their time to offer hands-on science experiences to local communities, collaborating mainly with schools and libraries.

"We're open to anybody who calls," he said, within what is logistically possible.

Sallee said the National Space Science & Technology Institute helps students develop and launch their own experiments by weather balloon to 90,000 feet to test how payloads are affected by a near-space environment.

The institute also is working to place a new 1-meter, research-quality telescope on Pikes Peak for education and research; recently received a $132,000 grant from the Environmental Protection Agency to develop a program on the importance of water resources; and hopes to develop other initiatives related to climate and planets.

In the future, Sallee said, MESO will be visiting schools in many remote communities for weeklong residencies, working with a primary target audience of middle school students.

Part of the aim, he said, is to plant a seed in young people's minds concerning the rewards of a career in the sciences.

"Hopefully at the end of the week some them will realize they have a spark for science and say, 'I am a scientist,' " Sallee said.