

# The Pikes Peak Observatory

PIKES PEAK  
OBSERVATORY

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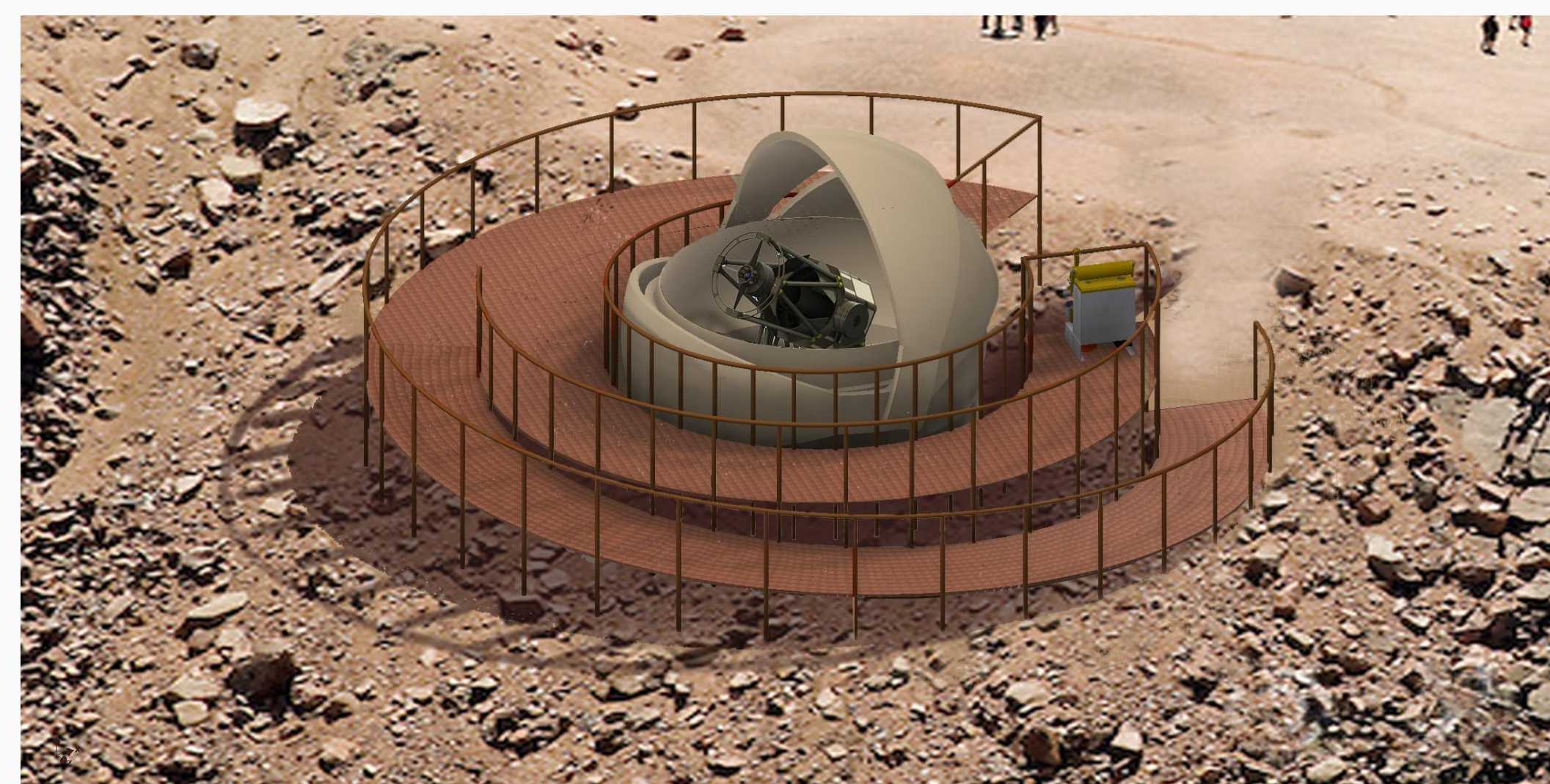
## Introduction

Pikes Peak Observatory (PPO), Inc. was incorporated as a 501(c)(3) educational non-profit in 1997 *“to engage and excite students, teachers, researchers, and the public in science and technology through the exploration and understanding of our environment and the universe,”* utilizing an observatory with telescopes and weather and climate-monitoring instrumentation on the summit of Pikes Peak, which stands at 14,115’ above sea level.

Today, PPO proposes a research-quality observatory offering 600,000 visitors to the Peak an unmatched educational experience with public viewing and interpretive exhibits that celebrate astronomical and atmospheric research on the peak, past, present, and future. The Observatory can be visited by tourists during the day and operated remotely from Colorado Springs or other locations, day or night, contributing to the education and research missions at the Air Force Academy, Colorado College, University of Denver, the University of Colorado, and other user organizations from around the world.

## Observatory Design Concept

An open truss 1-meter observatory telescope will facilitate public viewing of the elements of a telescope, and enhance its use in supporting science, technology, engineering and math (STEM) education, inspiring students to pursue advanced education leading to careers in STEM disciplines as part of the US technology workforce. The telescope will have fast tracking capabilities, permitting it to track asteroids, the international space station, and satellites in earth orbit. An additional hydrogen-alpha solar telescope will be co-mounted with the telescope for daytime solar observation. Imagery from these telescopes can be transmitted for display in the Summit Building.



## Pikes Peak Summit Complex

The City of Colorado Springs is spearheading design and construction of a new Summit Complex to replace a 1950s facility. The complex includes a visitors center with interpretive displays to educate visitors on the history and significance of Pikes Peak, a dining facility, gift shop, restrooms, trails with overlooks, tracks for the Pikes Peak Cog Railway, a US Army high altitude research laboratory, and communications site for Colorado Springs Utilities.



## MESO Engages Schools in GLOBE

Global Learning and Observations to Benefit the Environment (GLOBE) engages students in scientific data collection *to promote the teaching and learning of science, enhance environmental literacy and stewardship, and promote scientific discovery.* MESO will help teachers become GLOBE certified to direct student investigations of the atmosphere, biosphere, hydrosphere, and soil/pedosphere, joining 29,000 schools worldwide, to connect scientific investigation with real-world issues and related careers, while embracing environmental stewardship. GLOBE is jointly sponsored by NASA and the NSF, with support from NOAA and the Department of State.

## Mobile Earth & Space Observatory



A smaller telescope is being incorporated into a Mobile Earth and Space Observatory (MESO), a “science center on wheels” to engage and excite students, teachers, and local residents with hands-on educational and research

activities focused on weather, climate, space sciences, renewable energy, and scientific instrumentation. Geared primarily to middle school students and aligned with science education standards, the mobile lab will visit Colorado schools to deliver formal and informal STEM education, engaging students, teachers and the public. MESO will be capable of remotely operating Pikes Peak Observatory telescopes and displaying what is being observed at the school being visited.



## Summary

- ▶ Pikes Peak Observatory will provide a research-grade 1-meter telescope, H-alpha solar telescope, and climate monitoring equipment which can be operated remotely
- ▶ Pikes Peak can expose 600,000 summit visitors annually to environmental and space science
- ▶ A mobile earth & space observatory will visit schools to engage students in STEM disciplines to inspire additional STEM education and careers in technology
- ▶ Pikes Peak Observatory has broad community support
- ▶ A U.S. Forest Service use permit must be obtained

## Atmospheric Research Instrumentation

The observatory will include a fully equipped weather station as well as Solmirus Corporation’s All Sky Infrared Visible Analyzer instrument. The PPO is actively seeking other atmospheric monitoring instrumentation that would take advantage of this site’s unique ability to sample and measure conditions in the free troposphere.

## U.S. Forest Service Use Permit

The U.S. Forest Service manages the summit of Pikes Peak and requires organizations who seek to build or conduct activities on forest lands to submit a use permit application, citing what they intend to do, who will be involved, costs, financing, environmental impact, and why alternate (non-forest locations) cannot be used. PPO is working to identify sites for an 18’ observatory dome compatible with the approved Summit Complex design.