

After Dark

Updates from Great Basin National Park Foundation



Summer, 2019

Five years ago, Eva Jensen, Great Basin National Park's Cultural Resource Manager, found an extremely old rifle leaning against a juniper tree. The 1873 Winchester rifle had likely rested against that tree for a hundred winters, springs, summers and falls. A new exhibit funded by the Great Basin National Park Foundation through a donation from the Fund for People in Parks, was installed this May into the Baker Visitor Center.

Be sure to check it out on your next visit to the Park!

The Forgotten Winchester

In November 2014, archaeologists from Great Basin National Park found a weathered, rusty, old Winchester rifle leaning against a juniper tree in a remote, rocky area of the park. Exposed to sun, wind, rain, and snow for over 100 years, this artifact made in 1882 raises many questions for which we may never find answers. Take a few minutes to explore the stories of the Forgotten Winchester.

This is a model of the short version of the Winchester 1873 lever-action rifle. The "Forgotten Winchester" is longer, with a 24" octagonal barrel.

The Winchester 1873 Lever-Action Rifle

What makes this rifle so special?

The Winchester 1873 Lever-Action Rifle was one of the most successful rifles of its day, prized for its reliability and shoot frequency. Its steel frame made it stronger and lighter, and it could shoot up to 15 rounds before reloading.

The lever is pulled back, moving cartridges into the chamber.

A cartridge sits in the chamber, ready to be fired.

Up to 15 cartridges can be added to the tubular magazine.

Reach for the Stars

To further the interpretive mission of Great Basin National Park, *Reach for the Stars* (RFS) is targeting education and outreach to the communities surrounding the Park boundary. These areas are large and sparsely populated.

In the 2018-2019 school year, the Great Basin National Park Foundation engaged 24 elementary and middle school classrooms to learn about the Park and dark sky preservation through interactive classroom presentations. Educators have been thrilled to have the Foundation bring the Park to their classrooms.

"It was educational, engaging, and fun! It was perfect!"- 3rd grade teacher

"My kids were fascinated by the way light goes into the night sky and what they could design to change light pollution." - 4th grade teacher

"My students loved it!!! Thank you so much for taking your time to come to Ely to work with my class!!"- 2nd grade teacher

Reaching out to local communities is a high priority of the Park. Through RFS, we are able to work towards the Park's goal of inspiring deeper connections and relationships with local communities to the Park and its mission.



Left, Eighth graders at Ely Learning Bridge learn about the properties of light by making and using camera obscuras.

Right, First graders at Ely Learning Bridge play a game to learn about night time animal migration and the adverse effects of light pollution.





This May, Jacob Fausett defended his Masters thesis of a highly unusual star using the GBO. “Tabby’s star” shows highly irregular variations in its brightness, a behavior yet to be fully explained. Jacob monitored the star nightly using the GBO to understand the cause of the unusual flux variations. His data contributes to a larger collaboration of scientists working on the star. Jacob produced an automated pipeline to calibrate each night’s data and to perform photometry, which he ran every morning. His pipeline can be adapted by future generations of students for other projects.

Congratulations Jacob Fausett on his Masters of Science in Physics and to Melodi Rodrigue, his faculty advisor!

UNR students have been highlighting the power of the

protected dark skies at Great Basin National Park through using the GBO for astrophotography.

UNR undergraduate Andrew Sundquist produced striking images of the Eagle Nebula (pictured above left) and the Sombrero Galaxy (above right), as well as a color image of a dwarf galaxy so dim, it is only 20th in magnitude.

The dwarf galaxy is deficient in elements heavier than helium. Andrew’s GBO image will complement the Chandra X-ray telescope with observations of the same galaxy. X-ray data reveal that this small galaxy hosts a rapidly accreting black hole, a discovery that will be used to help constrain how black holes formed and evolved just a few hundred million years after the Big Bang when the Universe was deficient in heavy elements.

Welcome to UNR’s newest physics faculty- Dr. Richard Plotkin

Dr. Richard Plotkin joined the UNR physics faculty in March. Along with teaching undergraduates, he will be starting a graduate program in astrophysics.

Dr. Plotkin’s research has used ground based and space based telescopes including Chandra X-ray Observatory (space), Very Large Array and Australia Compact Array (radio), Hubble Space Telescope UV spectra, and Very Large Telescope for optical and Near IR spectra. He is enthusiastic for his students as well as himself to use the GBO.

The main goal of Dr. Plotkin’s research is to better understand the structure/ geometry of accretion flows and outflows in order to more effectively use radiation as a probe of Galactic and extragalactic black hole populations, and to learn how black holes may impact their large-scale environments.

The Foundation welcomes Dr. Plotkin to the GBO team of researchers!

