After Dark

Updates from the Great Basin Observatory,
a project of the Great Basin National Park Foundation

Telescope Tidings — Summer, 2017

Great Basin National Park's resources include one of the darkest skies in the contiguous United States, making it the perfect partner for the first research grade optical observatory located in a National Park. We are excited to report that the Great Basin Observatory (GBO), which saw its *First Light* August 25, 2016, is fully functioning in an autonomous mode. This means that there is no one on site and that all commands are executed remotely. Students and professors at our consortium of Partner Universities (Concordia University, Southern Utah University, University of Nevada, Reno, and Western Nevada College) can access the skies from their desktops! Students are planning to use the remotely operated telescope (funded by the Niggli Family) to study asteroid light curves, exoplanets, supernovae, double stars, and nebula photometry. The Great Basin Observatory is providing an excellent opportunity for universities and students while connecting the public to Great Basin National Park's precious dark sky resource and the hidden mysterious realm beyond our planet.

Research Report — University of Nevada, Reno

At the University of Nevada, Reno (UNR), Megan Rennie will use the GBO for an exciting new application, using astronomical data analysis to learn about the atmosphere of the Great Basin. She will measure atmospheric optical depth using the moon and Landolt stars (a series of stars that have had their light output measured very carefully creating a set for comparison). Landolt standard stars will help her determine the total optical depth of the atmosphere. She will also determine light extinction from aerosols. Atmospheric aerosols are plentiful and varied, coming from such sources as dust, forest fires and pollution. Aerosols can affect climate, weather and astronomical measurements, by scattering and absorbing radiation. Through her research she will learn about the size and composition of atmospheric aerosols, and possibly be able to identify noctilucent clouds (clouds made of ice crystals in the upper atmosphere). Megan is an undergraduate Atmospheric Science major, in the Department of Physics at UNR.

GBO images

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The M 51 Star System

Moon Ha P1 Panorama

The Orion Nebula

Reach for the Stars Education and Outreach Program

Our *Reach for the Stars* program aims to encourage future astrophysicists and conservationists, through inspiring students to think beyond our planet and appreciate the precious dark skies at Great Basin NP that help us to do this. Work has begun on K-12 astronomy-based curricular programming (funded by NV Energy) and a web portal (funded by the Robert S. and Dorothy J. Keyser Foundation) to engage researchers, students, educators and the public. In May, we completed our first 5th grade pilot program, developed and delivered by Dr. Melodi Rodgrigue, astrophysics professor at UNR and Dark Ranger Annie Gilliland of Great Basin NP, with support from Reno's Sundance Bookstore and the Nightingale Family Foundation. We were thrilled to have sixty people join us in April at the University of Nevada's Reno Innevation Center for a special Donor Event. Speakers presented how donations are being used to enhance the research and education of new scientists, fund college scholarships for Great Basin area high school students, create K-12 outreach and education programs and attract top talent to all Science, Technology, Engineering and Math programs at our Partner Universities.

Great Basin National Park Foundation (GBNPF) Welcomes...

Maria Denzler to the Board of Directors

Maria is an accomplished freelance writer and fine art photographer, currently living in Reno, Nevada. Besides winning awards for her art, she has been featured and published in several magazines and also co-authored two environmental books. She has been a technical writer and editor as well as special projects coordinator for the Nature Conservancy of Nevada. We are thrilled that she will be helping the Foundation with writing, social media and marketing strategies. Welcome on board, Maria!

Leesa Ricci as Great Basin Observatory Educator

Leesa is the President of the Southern Utah Space Foundation and worked for six years as the lead technician for Ashcroft Observatory. Leesa will be applying her years of experience in astronomy outreach and education to the development of our *Reach for the Stars* K-12 curricular programming and online educational web portal. Welcome Leesa!

Aviva O'Neil as GBNP Foundation Executive Assistant

Aviva worked in Resource Management and Research and Education and Outreach for the National Park Service for many years. She spent a dozen years digging the soil as an organic farmer and ran her own small organic farm for five years. She is passionate about preserving and protecting wild places like Great Basin National Park. Welcome Aviva!