



President's Message

Gage Slade leaves her post as editor of the *Bulletin* with this double issue. For the past year Gage has done an excellent job getting the *Bulletin* together and coordinating tasks so that the newsletter gets into the readers' hands before the month begins. Thank you Gage!

The Academy participated in the popular ADK outdoor fest June 8th. It was a day of showers so telescopic sun viewing was not possible but our displays of fossils and minerals attracted people strolling along the muddy "canopy trail" at the Mendon Pond site. We thank the following people who provided the canopies, helped set up or take down, prepared display materials, and/or greeted visitors: Bob Crumrine, Jeff Gutterman, Brian McGrath, John Handley, Dan Krisher, Paul Dudley, Jerry Colyer, John Diaz, Kathy Henrie, Lee Moore, and George Wonder.

You already know from previous announcements that the Fall Paper Session will be held at Nazareth College on November 9th. We are pleased to announce our guest speaker is Professor Roger Easton from the Carlson Center for Imaging Science at RIT, who will

enlighten us about the "coming golden age of manuscript imaging." You'll see more information about this lecture and the Paper Session in the October Bulletin and on www.rasny.org.

Summer's not over yet, enjoy!

Jutta Siefert Dudley

Camera Obscura: an ASRAS project

By Jutta Dudley collaborating with Nick Lamendola & Bob McGovern



The creative trio: Bob McGovern, Nick Lamendola, Al Russel

The RocheStar Fest was held on a day of showers and clouds but luckily little precipitation fell over

Ionia. Although we could not peer through a telescope that day we did get to look at our surroundings with another tool that made its debut at the Ionia site—a camera obscura. The instrument is taller than a person, topped by a rotatable lens and mirror and a black shroud with an entrance for a human head hides a white horizontal screen. Curious members poked their heads inside to admire the life-sized views of the observatory grounds. No one was disappointed. I enjoyed my time under the hood and took some photos in sepia and black and white, reminiscent of Victorian times. You may be wondering what a camera obscura is and what the Astronomy Section is doing with one. Here's a bit of history and the story behind the ASRAS camera obscura.

The camera obscura (camera obscura = dark chamber) is a dark chamber (smaller than a person or as large as a room) into which an image of the outside is projected through a hole, convex lens, or a lens with mirror. If all you have is a hole in a wall, you may notice an unclear upside down image on a surface inside a darkened room. This was remarked upon by Greeks like Aristotle and probably noticed even earlier. Artists long ago took advantage

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For updates to events, check the Academy website, <http://www.rasny.org>, and Section websites.

of tracing such images but once the science of optics was known, a sharper right-side-up image could be created. The trick lies in the proper orientation of a convex lens and mirror with the observer's back to the scene of interest.

Today the camera obscura continues to engage observers at some planetariums, museums, and historic sites. In Edinburgh, Scotland for example, people are delighted to view a panorama of the city. One of these sightseers was Bob McGovern who says "it was worth the trip to Europe just to see it." It was Bob who already had an idea planted in his mind that projecting an image at our facility in Ionia would be an excellent optics teaching tool. Although he was thinking of using a heliostat to enhance our solar observing capabilities, the idea of a camera obscura (CO) was too good to pass up especially when a talented fellow like Nick Lamendola is up to the challenge of building it!

Nick says Bob's criteria for the camera obscura were that the instrument be "portable, easy to store, and that the viewing screen be 31 inches off the ground." In March of 2013 Bob handed Nick a large aerial photography lens and the challenge was on. He found the lens too heavy and the focal length too short to work with. While researching the construction of COs, Nick contacted George Keene, a former ASRAS member who happens to make these instruments for

institutions. After conferring with George and Bob, by early April, Nick had bought a lighter and longer focal length lens suitable for the project.

At a work party later that month, Nick engaged Al Russel in a conversation about his plans for the CO. This sparked Al's interest and participation. He offered a first surface mirror along with a rack and pinion for focusing. The mirror greatly improved the sharpness of the projected image. Al also "offered to perform some ray tracing calculations so we know how long to make the focus tube and what effects the lens tube diameter would have on the image" says Nick. He concludes with "Al's advice and calculations were very important and gave me confidence that we were on the right track."



A view through the camera obscura

From the end of April until the June 8th RocheStar Fest, Nick was busy constructing, painting, and even sewing the camera obscura parts. As described by Nick, the

CO consists of three main parts: A mirror and lens assembly, a cage and image disc assembly, and a tripod. The mirror tilts up and down while the lens rotates side to side on a lazy-susan bearing. The cage bolts to the tripod but can be removed for storage. The Lexan disc is painted flat white and the cage and lens sections, black. Several coats of boiled linseed oil cover the wooden tripod.

Nick found the disc was frustrating to make since it had to be curved, not flat. After several failed attempts to epoxy a bolt to the backside to pull the disc down, he managed to glue the bolt with another epoxy and reinforced it with carbon fiber. Presumably less frustrating was sewing the dark, hooded shroud even after a sewing break of over 20 years since he and his wife had last created their daughter's Halloween costume.

ASRAS will use the camera obscura to teach members young and old some principles of optics. No doubt it will also entertain us and we look forward to nice views of some stellar objects near the horizon. This project shows what people with ideas and talent can put together. Thank you Bob, Nick, and Al!

Related Web sites:

http://www.camera-obscura.co.uk/camera_obscura/camera_obscura.asp

<http://www.cameraobscuras.com/>

http://en.wikipedia.org/wiki/Camera_obscura

Events for August and September, 2013

For updates to events, check the Academy website, <http://www.rasny.org>, and Section websites.



August

Aug Fri 2 ASTRONOMY SECTION

7:00 p.m.–10:00 p.m. Farash center in Ionia. ASRAS General Members Meeting. Contact Carol Latta (585) 230-9548.

Aug Tues 6 ASTRONOMY SECTION

7:00 p.m.–10:00 p.m. Farash center in Ionia. ASRAS Board meeting. Contact Carol Latta (585) 230-9548.

Aug Wed 21 RAS BOD MEETING

7:00 p.m. Brighton Town Hall, Stage Conference Room.

Aug Fri 23 LIFE SCIENCES

6:00 p.m. We will join the Burroughs Audubon Nature Club for their Pot Luck dinner/lecture/hike described below. This is always a great evening to hear and see nature in a more unexpected manner. Please call me so I can let them know how many of us to expect. Karen Wolf. (585) 670-9709.

SOUNDS OF A SUMMER NIGHT

After a delicious pot luck dinner, naturalists Bill O'Neil and Martha Zettel will present a program about night creatures such as bats and singing insects which vocalize in summer. The talk will be followed

by a short walk in the sanctuary so that we can hear them ourselves.

Bring your place settings, a dish to pass, and a flashlight for the walk. Hosts: Bob and Sandy Mauceli, (585) 264-1704.

Aug Sat 24 ASTRONOMY SECTION

Noon on. Farash Center. Ionia. Open House. Come and see all that the Farash site has to offer. May cancel for inclement weather. Contact Bob McGovern (585) 315-1850



September

Sept Fri 13 ASTRONOMY SECTION

7:00 p.m.–10:00 p.m. Farash center in Ionia. ASRAS General Members Meeting. Contact Carol Latta (585) 230-9548.

Sept Mon 16 ASTRONOMY SECTION

7:00 p.m.–10:00 p.m. Farash center in Ionia. ASRAS Board meeting. Contact Carol Latta (585) 230-9548.

Sept Tues 17 MINERAL SECTION

7:00 a.m.–9:00 p.m. Downstairs Meeting Room, Brighton Town Hall, 2300 Elmwood Ave., Rochester. **Annual SHOW & TELL/SWAP & SALE.** Members can show and tell what they collected or purchased over the summer, and sell or swap

items they would like to get rid of. Also for sale will be numerous specimens donated to the club at very reasonable prices, plus some giveaways. Come early to set up your items. Refreshments. Club members only for the sale. For more info, please contact Stephen Busschaert at (585) 288-5683 mineralvp@rasny.org

Sept Wed 18 RAS BOD MEETING

7:00 p.m. Brighton Town Hall, Stage Conference Room.

Sept Wed 18 LIFE SCIENCES

1 p.m. – 4 p.m. Workshop at the RAS Herbarium, located in the basement of the Rochester Museum and Science Center (RMSC). No experience needed! Plan to come and help with this valuable collection – and see some interesting plants! If you plan to attend, please send an RSVP to Elizabeth Pixley. Then, at RMSC, go to the front desk and ask staff person there to call ext. 368, the phone in the Herbarium. For more information, contact Elizabeth Pixley, herbarium curator (585) 334-0977 or epixley@rochester.rr.com.

Sept Sat 21 ASTRONOMY SECTION

Noon on. Farash Center. Ionia. Open House. Come and see all that the Farash site has to offer. May cancel for inclement weather. Contact Bob McGovern (585) 315-1850

ONGOING EVENT

ASRAS will operate the telescope, or one on the sidewalk, at Strassenburgh Planetarium on mostly clear Saturday nights. Contact Jim at (585) 703-9876

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