The Mason-Dixon Astronomer

Westminster Astronomical Society Inc. of Maryland

September 2012 Vol. 29 No. 9

www.westminsterastro.org

Star Points for September 2012

"A Cold Summer's Night on a Fourteener"

by Curtis Roelle

In This Issue:

The stars don't twinkle on the top of Colorado's 14,270-foot Mount Evans. That's what I discovered on the last Saturday in August when I spent the night by myself on top of the mountain, alone with only a sleeping bag, cot, and a fine pair of binoculars. It was an exhilarating experience I'd like to share.

One of Colorado's most famous "fourteeners" – mountains higher than 14,000 feet – Mt. Evans is also home to the University of Denver's (DU) Meyer-Womble Observatory, the highest observatory in all 50 states. At its peak, air pressure is 54% of that at sea level, causing the uncanny non-twinkling stars, making Mt. Evans a good location for field astronomy. The observatory is currently not in use because winds, averaging 90 mph and gusting to 135 mph, one day last winter blew away its protective dome.

I began the evening at sunset by visiting an open house at the historic Chamberlin Observatory, located in Observatory Park near the UD campus in Denver. The large dome of the beautiful 1890s Romanesque-style building houses the main telescope, a refractor with a 20-inch-diameter lens built in 1894 by the famous opticians Alvin Clark & Sons.

In the surrounding park, members of the Denver Astronomical Society set up their own telescopes for the public to look through. A fellow named Jack had his own 6-inch Alvin Clark refractor whose factory plate bore the date 1877. Through it I enjoyed a stunning view of the 1st quarter Moon that was razor sharp and free from any color fringing.

I observed the Ring Nebula, a planetary nebula in Lyra, through the 20-inch Clark. Inside the observatory I first learned of the passing earlier that day of American astronaut Neil Armstrong. In the future, when I remember where I was upon hearing the sad news, that memory will be pleasant. Then I departed, heading west toward Mt. Evans.

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September Meeting: Wednesday, September 12, 2012, 7:30 p.m., at Bear Branch Nature Center

Speaker: Brian Eney will present "It's a Telescope, No It's an Airplane, No It's a Telescope on an Airplane! The Brief Adventures of Me and SOFIA." Read more on page 5.

September President's Message

by Jim Reynolds

Greetings all!

I must apologize from my missing article from last month's MDA.

The annual WASI summer picnic was a few weeks ago. There was lots of good food, fun, laughs and camaraderie. Skip and Douglas Howard were our chiefs for burgers and hot dogs. I brought chicken (Mrs. Reynolds was out of town so no deviled eggs this year). Eric Hirtle brought his renowned tuna casserole, and we had some amazing desserts. A good time was had by all who attended the picnic. We're already looking forward to next year's picnic. It won't be long before we're discussing the renowned December "Eating Meeting"!

I'd like to welcome back Brian Eney to the area. Brian has been away for the summer working for NASA in California. Brian will be sharing some of his experiences with us at the September WASI meeting.

It's late summer and if you're willing to stay up or get up at a late (or early depending on your perspective) time, you will see some of our autumn and winter celestial friends returning. A lot of folks will say that they find the winter constellations more interesting, but I love 'em all. One of my all-time favorite summer evening activities is to sit in my front yard (facing south) and watching Scorpius and Sagittarius. By the way, did anyone see the night sky a couple Saturday nights ago? Just about perfect viewing conditions!

I recently received an email reminding me that I was delinquent in my annual WASI dues. I am guilty as charged! My apologies to our treasurer, Skip Bird. I will of course be bringing the family checkbook to the September WASI meeting, and I encourage anyone & everyone else who is tardy with their annual dues to get current.

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Star Points, *cont.*

The highway wound its way up the mountain. When I reached its Summit Lake I couldn't see the lake at all but knew it was there only by the Moon reflected in its waters. On the switchbacks above the tree line I could see shadows of mountains cast by the Moon in the valley below. It seemed as though I could reach out and touch their faint silhouettes nearby. But they were thousands of feet below and miles away in the dimness of night, and it startled me to realize the rented SUV was driving only inches away from a sheer drop into a rocky black abyss below.

It was 11 p.m. when I reached the top, and the temperature was already in the upper 30s and falling. I changed from shorts into long pants and donned a souvenir fleece jacket I had recently purchased. Thanks to the damaged observatory being closed, I was the only person at the peak on a Saturday night. I carried everything in a single trip over the rocky trail to the observatory. The moonlight guided each foot around every stone. I set everything up, and soon the sleeping bag was wet with dew.

Beyond the eastern side of the mountain were the lights of the mile-high city Denver, located nearly two miles below. They looked like glittering pinkish-orange electric netting whose garish glow hovered over it against the pristine sky.

I crawled out of the gentle breeze and into the sleeping bag with my binoculars waiting for the Moon to set. Its phase was nearly identical to how it was the night Apollo 11 landed on the Moon. It finally set around 1 a.m. and the stars came up like dainty house lights in a colossal pitch-black theater. At the same time the air became perfectly still, producing a new sound: dead silence. No crickets chirping, frogs croaking, or mosquitos buzzing by the ears. The sleeping bag was now covered with frost.

The cot provided the perfect posture for viewing the ragged Milky Way stretching across the center of the sky overhead. It's the real thing, not an image on a TV screen or computer monitor. Unlike the everyday things of this world there is nothing fake about it — no false color, makeup, highlighting, augmentation, spin, or special packaging. On Earth looking up at night you see everything else, and there is so much more of it up there than there is down here. A person can feel one's own problems dissolving away at the simple yet majestic sight.

With binoculars were seen many things, such as the large North American Nebula in Cygnus the Swan. Even without binoculars, the naked eye was capable of seeing far distances and millions of light-years, such as the great Andromeda Galaxy some 2.5 million light-years from Earth, and the even more distant galaxy M33, or the "Pinwheel."

Having planned to spend the summer in Denver I didn't bother packing a hat and gloves, so my head and hands were getting cold. I placed the shorts over my head and used the pant leg as a kind of periscope to keep the wind out of my face. Thank goodness there was nobody around to see.

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Star Points, *cont.*

The cold hard rubber surface of the binoculars made my gloveless hands so cold my body started to shiver. Fortunately, I have a rather long sleeping bag and was able to hold the binoculars through it from the inside. During a rest period I brought the binoculars inside the sleeping bag to warm them up enough to hold them, which allowed wider sweeps to be made.

At 3 a.m. a cold breeze began to blow, and within an hour came occasional buffeting gusts. My feet started getting cold and with it began a slight, dull headache. I rationalized that the brain was sharing its blood supply with the poor feet in order to warm them.

Finally, twilight came and then the sunrise. The rim of the Sun rose out of the murky horizon, turned oblate, then distorted with horizontal ripples.

On the return trip, a short distance from the mountain top, I discovered a herd of about 25 mountain goats. They were all ewes, young adults, and kids. I got out and walked with them as they strolled around stones and grazed on mountain grasses.

That night on Mt. Evans is one to remember. A couple of miles closer to the stars and the feeling that all the problems and worries had either been left up there, or had shrank and withered to a manageable size.

So if you're ever in Colorado, take the time to visit Mt. Evans. It's not as famous as Pike's Peak, but it's taller and just as accessible. But be warned that the road is only open between Memorial Day and Labor Day.

"Star Points" by Curtis Roelle appears in the Carroll County Times *on the first Sunday of each month. Visit the website at* http://www.starpoints.org or send email to StarPoints@gmail.com.

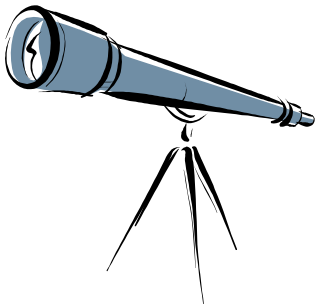
President's Message continued

A quick reminder for everyone doing public service: Please don't forget to log your volunteer hours into the our Night Sky Network log. This keeps track of the number of hours of public outreach our club performs.

I'm looking forward to our September monthly meeting (09/12/2011) as well as our public observing at BBNC and Soldier's Delight. Lastly, I have uploaded the 2013 monthly planetarium show and star party schedule to the WASI website.

Clear skies everyone!

Upcoming WASI Observing and Events



Soldiers Delight Public Stargazing September 8, 8 p.m., at Soldiers Delight Natural Environment Area in Owings Mills

Monthly Meeting September 12, 7:30 p.m., at Bear Branch Nature Center (BBNC)

Cunningham Falls Camp Out September 14-15, 9 p.m., at Cunningham Falls State Park in Thurmont, Maryland (contact Skip if you'd like to help)

Black Forest Star Party September 14-15, at Cherry Springs State Park in Potter County, Pennsylvania; for more information, see http://www.bfsp.org

Planetarium Show September 21, 7:30 p.m., at BBNC

SEPTEMBER MEETING PROGRAM

Brian Eney will present "It's a Telescope, NO It's an Airplane, No It's a Telescope on an Airplane! The Brief Adventures of Me and SOFIA." Brian will be discussing his trip across the country, the many places he visited, the technical aspects of infrared astronomy and observing techniques, and the role he played this summer on the Stratospheric Observatory For Infrared Astronomy (SOFIA).

Minutes of Meeting on August 8, 2012

A fantasy video of astronomical subjects was presented by Skip Bird.

Called to order at 7:41 by Skip Bird, Treasurer.

Called for new attendees, visitors, etc. 2 new — old returning.
One of the new members found the organization on the internet.

Observatory update: The architect has the current plans. The current dimensions are 24 x 40 ft.

There will be a star party Saturday at Mt Airy and also Saturday at Soldiers Delight.

News of the Weird was presented by Eric Bender.

Mark Kochte was our speaker, presenting instructions and examples of "time-lapse" photography.

Adjourned at 9:15 PM.

Respectively submitted,
Robert L. Clark, Secretary, Westminster Astronomical Society

A Brand New Age: Queue Observing at Mt. Paranal

by Dr. Marc J. Kuchner

First a caravan of white observatory cars arrives, winding up the narrow road to the 2600-meter-high (~8500-foot-high) summit. Then the shutters around the domes open, and rays from the setting Sun alight on colossal mirrors and metal struts. It's the beginning of another busy night at Mt. Paranal, Chile, where I am learning about new, more efficient ways of managing a modern observatory.

I stepped into the observatory's control room to soak up some of the new, unfamiliar culture. Here, under florescent lights and drop ceilings are banks of computer screens, one bank to control each of the four big telescopes on the mountaintop and a few others, too. At each bank sits two people, a telescope operator and an astronomer.

The layout of this workspace was not unfamiliar to me. But the way these Mt. Paranal astronomers work certainly was. When I was cutting my teeth at Mt. Palomar observatory in California, I would only go to the telescope to take my own data. In stark contrast. everyone observing at Mt Paranal tonight is taking data for someone else.

The Mt. Paranal astronomers each spend 105 nights a year here on the mountain performing various duties, including taking data for other astronomers. The latter, they call "executing the queue." Headquarters in Germany decides what parts of the sky will have priority on any given night (the queue). Then the Mt. Paranal astronomers march up the mountain and carry out this program, choosing calibrators, filling the log books, and adapting to changing conditions. They send the data back to headquarters, and from there it makes its way out to the wider astronomical community for study.

This new way of working allows the Mt. Paranal astronomers to specialize in just one or two telescope instruments each. Surely this plan is more efficient than the old-fashioned way, where each of us had to learn every instrument we used from scratch — sifting through manuals at 3:00 a.m. when the filter wheel got stuck or the cryogen ran out, watching precious observing time tick away. Here at Mt. Paranal, much of the work is done in a big room full of people, not off by yourself, reducing some dangers of the process. Also, queue observing cuts down on plane travel, an important step for cutting carbon emissions.

It's a brand new age, I thought as I watched the giant domes spin in the silent, cold Chilean night. And maybe with queue observing, some of the romance is gone. Still, my colleagues and I couldn't help saying as we stared out across the moonlit mountains: I can't believe how lucky we are to be here.

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Dr. Marc J. Kuchner is an astrophysicist at the Exoplanets and Stellar Astrophysics Laboratory at NASA's Goddard Space Flight Center. NASA's Astrophysics Division works on big questions about the origin and evolution of the universe, galaxies, and planetary systems. Explore more at http://www.science.nasa.gov/astrophysics/. Kids can explore these topics at http://spaceplace.nasa.gov/space.

European Southern Observatory at Mt. Paranal, Chile