The Denver
# OBSERVER
AUGUST 2012

## STARRY, GLORIOUS NIGHTS

**OUR MILKY WAY GALAXY**

The galactic center of our Milky Way galaxy rising over pine trees in a Colorado forest is always a grand sight from a dark sky away from cities. The M24 star cloud is just above dead center, framed by (from the bottom) the Lagoon and Trifid Nebulae and (toward the top) the Omega and Eagle Nebulae.
Roger used a Canon 1D Mark IV 16-megapixel digital camera with a 24 mm f/1.4 lens at f/2, for 15 seconds at ISO 1600 on a stationary tripod. This is a crop from a 6-frame mosaic, each a 15-second exposure. Exposure time is limited by the rotation rate of the Earth, which will blur the stars into streaks at longer exposure times.

*Image © Roger Clark*

### Calendar

1.....Full moon
9..... Last quarter moon
11 & 12..... Perseid meteor shower peak
17..... New moon
24..... First quarter moon
31..... Full moon (Blue moon)

### Inside the *Observer*



## AUGUST SKIES

*by Dennis Cochran*

Stuff happens, man! Or dude. On Monday the 6th of this month (EDT), the Mars craft "Curiosity" (the pride of American engineering and possibly the last gasp of our space program), will arrive at the Red Planet. Let us hope that the operation to lower the deluxe-sized rover to the ground from a retro-rocketing sky crane will work. One can get details, it says here in the Canadian magazine *SkyNews*, from *marsprogram.jpl.nasa.gov/msl*. This maneuver is so complicated that I wonder if it will work. We pessimists have a saying: Things will get worse before they get worse! (This is Murphy's Law restated). Hey, that would be a great slogan for the human program of not doing anything to stop our $CO_2$ creation that powers global warming and will turn Earth into Venus! The Morning (and Evening) Star, incidentally, could be called the armpit of the solar system. However, every solar system needs two armpits, right? Someday aliens will come to our parched planet and wonder what happened—and we won't be here to tell them. Some burnt-out cars will give them a hint, however.

Another "stuff happening" is the **Perseid Meteor Shower on Sunday, the 12th.** The night will be moonless, say the Canadians, and Ottewell says there'll be a waning moon which is essentially the same thing. (Starting at mid to late evening on the nights of August 11/12 and 12/13, watch for the meteors to streak across this short summer night from late night until dawn.) If you are a morning person, at dawn you may find the celestial line-up of Venus, the crescent moon, Jupiter and the Pleiades. The Perseid meteors had a double peak in the 90s and 2004 but a single peak is expected this

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# PRESIDENT'S CORNER

*by Ron Pearson*

This has been quite a summer for DAS members, unfortunately it's not one we'd wish for, or wish on anyone else. It began with major wildfires in the west creating smoky hazy skies over Colorado during Star Stare, and then wildfires in our own area up and down the Front Range burning many hundreds of homes to the ground of our neighbors to the north and south This affected our July meeting speaker and added to the smoky skies while also forcing the cancellation of the August Weekend Under the Stars (W.U.T.S.) by our friends in Wyoming. The dome of the Meyer Womble Observatory was destroyed along with a summer season of research for DU's Dr. Bob. Then, the start-up of the 24/7 oil drilling near our Ed Kline Dark Sky site lit up the southern sky and is ruining our views of the summer Milky Way.

Let's hope it can only get better from here out! The good news is, while it's hard for an astronomer to say this is good, but the monsoon rains have come and the wildfires and danger are greatly reduced. We are hopeful that Southwestern Energy is nearly done with its Extreme Lighting Drilling operation and have not discovered a drop of oil or other resource. And repairs are underway to the Meyer Womble Observatory on Mt. Evans. It's always a test of character to see how folks respond when things don't go one's way, and we have been severely tested this summer. DAS members have risen to the challenges of the extreme light pollution at our site by building a system of screens that block some of the glaring light, and we have exchanged polite "words" with our temporary (we hope) neighbors to the south.

Since last month we have sent a second letter to Southwestern Energy which included Arapahoe County and the Colorado Oil and Gas Conservation Commission further outlining the effects their poor lighting are having on our members use of the site. We've asked them to "be good neighbors" for either the short term or long term, by modifying the direction and angles of their most offensive lights while

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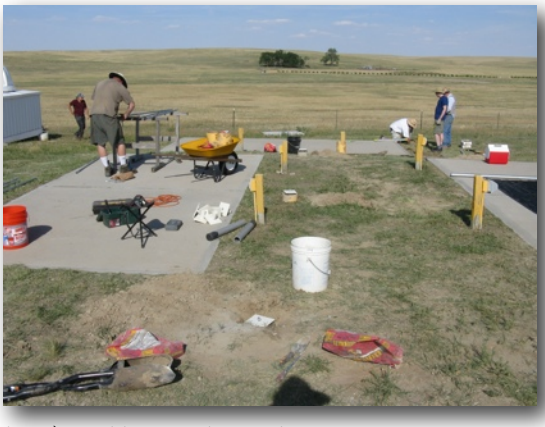
**DARK SKY WARRIORS**

On July 14th, a work team assembled at the dark site to pour concrete footings with 24-inch-deep pole inserts for screens intended to block high winds and the temporary (we hope) light pollution from an oil well. Here, David Delassus installs hooks on support pipes he modified in his home workshop, while Juan Velasquez, Glenn Frank, and Digby Kirby finish up an excavation. Footings for five new windscreens (in addition to the existing prototype screen) were installed.

*Image courtesy Darrell Dodge*



# DAS SCHEDULE

## AUGUST

**3** DAS General Membership meeting at D.U.'s Olin Hall: Speaker: Daniel Greenidge on BioBlitz Light Pollution Readings (Begins at 7:30 P.M.)
**5** Mars "Curiousity" to land on Mars
**10** E-Board Meeting at Chamberlin (Begins at 7:30 P.M.)
**16-18** WUTS, Foxpark, WY. (CANCELLED)
**17-19** EGK Dark Sky weekend
**25** Open House at Chamberlin Observatory (Begins at 8:30 P.M.)

## SEPTEMBER

**3** Labor Day
**7** E-Board Meeting at Chamberlin (Begins at 7:30 P.M.)
**8-16** Okie-Tex Starparty
**14-16** EGK Dark Sky weekend
**22** Open House at Chamberlin Observatory (Begins at 8:30 P.M.)
**26** Yom Kippur
**28** DAS General Membership meeting at D.U.'s Olin Hall: Speaker: Peg Ilig - Baehr Observatory in Pine, CO. (Begins at 7:30 P.M.)

***Public nights are held at Chamberlin Observatory every Tuesday and Thursday evenings beginning at the following times:***
***March 15 - April 14 at 8:00 P.M.***
***April 15 - August 31 at 8:30 P.M.***
***September 1 - September 30 at 8:00 P.M.***
***October 1 - March 10 at 7:00 P.M.***
***Costs to non-members are: $3.00 adults, $2.00 children.***
***Please make reservations via our website (www.denverastro.org) or call (303) 871-5172.***

## Society Directory

***President:***
Ron Pearson (303) 670-1299
*president@denverastro.org*
***Vice President:***
Lisa Judd (626) 487-8515
*vp@denverastro.org*
***Secretary:***
Dennis Cochran (720) 870-0465
***Treasurer:***
Brad Gilman (720) 488-1028

## Executive Board Members

Chuck Carlson
Jack Eastman
Joe Gafford
Chuck Habenicht
Ron Hranac
Naomi Pequette
David Shouldice
Dan Wray
President Emeritus, Larry Brooks

## Committees

***Van Nattan-Hansen Scholarship Fund:***
Tim Pimental (Chair)
PO Box 100621
Denver, CO. 80250-0621
***EGK Dark Site Committee:***
Darrell Dodge, Interim Chair
*Email: darksite@denverastro.org*
***IDA Representative:***
Dr. Robert Stencel
Email: *coloida@hotmail.com*

## Volunteers or Appointed Representatives

**ALCor:**
Darrell Dodge (303) 932-1309
**Newsletter:**
Editor: Patti Kurtz (720) 217-5707
Email: *p_kurtz@comcast.net*
The *Observer* is available in color PDF format from the DAS website.
**Website:**
Darrell Dodge
Email: *webmaster@denverastro.org*

**Librarian:**
Phil Klos
DAS Information Line:(303) 871-5172
**DAS Correspondence:**
Denver Astronomical Society
Chamberlin Observatory c/o Ron Pearson
2930 East Warren Avenue
Denver, Colorado 80210

*The Executive Board conducts the business of the DAS at 7:30 p.m. at Chamberlin Observatory. Please see the Schedule of Events for meeting dates. All members are welcome.*

**www.denverastro.org**

## AUGUST SKIES *(CONTINUED FROM PAGE 1)*

year. On Monday the 13th Venus will be occulted by the moon in late afternoon. This is an interesting phenomenon to watch, and Mars, Saturn and Spica will line up vertically for your viewing pleasure.

We're getting into the season for the bright stars Altair and Vega, the Ring Nebula and many-splendored Cygnus the Swan, aka the Northern Cross. And I can't forget about Hercules: I always find Hercules by scanning west from Vega. Just west of him is the unmistakable semicircle of Corona Borealis: the story is that Ariadne married Dionysus (it's a long story) and when she died he put her crown into the heavens. The Northern Crown has some double stars: to the left of the CrB α (alpha) star, brightest in the curve, is CrB λ (lambda), a very close double, as is η (eta), just west of the beta-theta line at the west end of the curve. If you follow up from the beta-theta line north almost twice its length farther you'll find the wide pair of the ζ (zeta) star. Johannes Bayer started using Greek letters to identify the stars in a constellation in order of brightness (α [alpha] for brightest, β [beta] for 2nd-brightest, etc.) Modern astronomers have used capital Roman letters to continue past the Greek alphabet. So, swimming down center-left in the crown is R Coronae Borealis, a peculiar variable star with irregular dimming of light due to its self-generated clouds of carbon soot. You have to keep an eye on it to catch these events, during which emission lines can appear in the spectrum as the soot heats up. It would be a nice subject for someone who wants to do some spectroscopy except that its irregularity makes it hard to plan for.

In Hercules we find M13, the big globular cluster on the western edge of the keystone asterism. I like to call the keystone, as I have said too many times, the Chinese take-out box. Right north of M13 is NGC 6207, a faint galaxy. We've also mentioned M92, a globular one box-height above the box and a bit left of center, sort of by itself. If you ooch northwest a similar distance above the western edge of the box there's a dimmer globular, NGC 6229. Then if you slant down-left from the lower-left corner of the box along Hercule's left leg you'll come to his delta star, an optical double. A three arc-second real double can be seen if you drift up-left from Hercules past the head of Draco to the dragon's northeast corner and his epsilon star, which marks a major turning point in the dragon's twisting body.

**PERSEIDS!**

One of the most reliable meteor showers of the year, comet Swift-Tuttle leaves the Perseid meteor shower in its wake . We should be able to see about one meteor every one to two minutes!

*Image © Pat Gaines*

**Bad Things:** A Perseid meteor might hit you on the head. You might wear a helmet while viewing the meteor shower. And, maybe wear a hockey goalie's body pad and sturdy shoes. If you don't have a helmet, a large pot will do. But don't tell anybody that I said to do this. And make sure someone takes a picture of you in your armor. If a meteorite lands near you (an unlikely event), pick it up with tongs and drop it into a zip-lock bag. You can give it to a university to analyze, or sell it to a meteorite dealer for big bux! Meteors mostly burn up in the atmosphere, however, and only a few make it to the ground, where somebody finds them or we wouldn't have meteorite collections like the ones that several club members often show at Chamberlin Open Houses.

**WELCOME NEW DAS MEMBERS FOR MAY THROUGH JULY 2012**

Jennifer Carroll
Wally Michener
Lansing Mullis
Dawanta Parks
Kenneth Piner
Ken Schatz
Jim Sexton
Jeff Stoner
Christopher Westerkamp
Karen Wheeler

# ABOUT THE DAS

Membership in the Denver Astronomical Society is open to anyone wishing to join. The DAS provides trained volunteers who host educational and public outreach events at the **University of Denver's Historic Chamberlin Observatory,** which the DAS helped place on the National Register of Historic Places. First light at Chamberlin in 1894 was a public night of viewing, a tradition the DAS has helped maintain since its founding in 1952.

The DAS is a long-time member in good standing of the **Astronomical League** and the **International Dark Sky Association.** The DAS' mission is to provide its members a forum for increasing and sharing their knowledge of astronomy, to promote astronomical education to the public, and to preserve Historic Chamberlin Observatory and its telescope in cooperation with the University of Denver.

The DAS is 501 (c)(3) tax-exampt corporation and has established three tax-deductible funds: the Van Nattan-Hansen Scholarship Fund, the DAS-General Fund and the Edmund G. Kline Dark Site Fund.

More information about DAS activities and membership benefits is available on the DAS website at *www.denverastro.org.*

# IDA'S DARK SKY GIVEAWAY CONTEST!

Enter the International Dark-Sky Association's Darksky Giveaway for an astronomically grand prize—a set of eight TeleVue Ethos eyepieces valued at $5,665, generously donated by Televue Optics.

To enter the IDA's Darksky Giveaway, you must be an IDA member before the entry closeout date of August 31, 2012. If you are not a member, joining is easy and the cost of a one-year membership is only $35.00. To join or renew your membership, visit www.darksky.org and select the "Join" tab at the top of the webpage. You can also join by calling the IDA office at (520) 293-3198.

Entering to win is also a breeze. Visit darksky.org/giveaway where you can fill out the entry form online and read the official rules.

Individual memberships help IDA perform its mission in stopping light pollution and helps to support its many programs. Through the International Dark Sky Places program, IDA and its partners certify locations with exceptional nightscapes as International Dark Sky Communities, International Dark Sky Parks, and International Dark Sky Reserves. The Dark Sky Parks and Protected Area Program currently works with national parks to help them utilize quality outdoor lighting. IDA's new Suburban Outreach Sites project partners with astronomy clubs to establish accessible programs for kids and their parents. These programs help IDA to engage communities and to raise awareness and ultimately "to preserve and protect the nighttime environment and our heritage of dark skies through environmentally responsible outdoor lighting."

IDA members make a big difference in their communities and around the world, which is why IDA is thrilled to offer its members such a premium giveaway from Televue Optics. Make sure you enter the DarkSky Giveaway by the deadline and good luck!

To learn more, visit *www.darksky.org.*

The winner will be announced at the Pacific Astronomy and Telescope Show in September 2012, but does not need to attend PATS to win.

## GEAR UP FOR OKIE-TEX!

*By F. Jack Eastman*

Joe Gafford's imaging set-up at last year's Okie-Tex Star Party.

*Couresty Joe Gafford*

Fall is approaching and another Okie-Tex Starparty is drawing near. The Okie-Tex takes place near Kenton OK, a town of 17 folks. Located in the Oklahoma Panhandle, this location is far from any sizeable city. Boise City, OK, with a population of 1,200 is 35 miles away. This promises essentially no light pollution. SQM measurements in past years are 21.9 - 21.6.

The route is east on I-70 to Limon, then Highway 287 all the way to Boise City. From there it's -35 miles west to Kenton. Having been to the last couple Okie-Tex star parties, I found the experience to be thoroughly enjoyable, the meals first class and the people great. I highly recommend this event.

See the Denver *Observers* November 2009, December 2010 and December 2011 for details:.

*http://www.denverastro.org/newsletters/NOVEMBER2009forweb.pdf*
*http://www.denverastro.org/newsletters/DECEMBER2010forweb.pdf*
*http://www.denverastro.org/newsletters DECEMBER2011_colorforweb.pdf*

## DAS JOB JAR

We have new volunteers! Thanks so much to those who've answered the call for the positions in last months' want-ads. We have a couple of people who'd like to get involved with showing The City Dark, and interest in helping maintain the club's roster. As you may be aware, The City Dark has also aired on PBS now, so the job of finding venues to show it has been evolving and thus keeps us on our toes. And, as a veep I'm also tickled that there are now a few people providing me with a safety cusion in case a speaker backs out for any of our meetings. When the details settle down, I hope to provide a short profile of the newest crop of folks that keep our club rocking along.

With that, here's our newsest bag of goodies that might be fun for members to do:

**JOB JAR**

**Information Technology Specialist**

Our long-time IT person, Chadd Warwick, has a busy life and would like to pass the hat after years of service. The system he maintains includes the DAS laptop at Chamberlin, the system in the Chamberlin ready-room (outside the DAS office) that runs the screens in the dome, and the server that houses our web page. It's also nice to know when it's time for an operating systems upgrade. To fill Chadd's shoes, our IT person should be familiar with PHP coding, systems connectivity, and writing line-by-line instructions for operators, and work closely with Webmaster Darrell and Chamberlin representative Aaron Reid for internet connectivity issues.

**Open House dome crowd help**

You may remember this position from earlier – Norm Rosling has filled it perfectly. But there were two positions then, and we still need to fill the other one; in fact we'd do well with two more. Duties include leading people from the door to the back of the line with a red light until their eyes can become dark-adapted, checking shoes for high heels and untied laces, entertaining small kids while their parents and older siblings are on the gantry, and explaining target particulars to the line so they know what to look for when they get up to the eyepiece. Many folks like to spend Open Houses on the lawn with their own scopes, but if you're new to the hobby and don't quite want to perform with your equipment in front of a crowd, then it's still very rewarding to be one of us. You'll need your nametag if Joe has made you one.

**Calendar Notices Coordinator**

Yes, this position is still open, but few local neighborhood papers have appropriate space for downtown events, so it's time to shrink this task. We need someone to submit notices for our monthly Open Houses to the Denver Post's "Your Hub" feature. It's a once-a-month task whose only requirement is to familiarize oneself with the web application used for submitting it.

**NASA'S** *SPACE PLACE*

# HOW MANY DISCOVERIES CAN YOU MAKE IN A MONTH?

*A Space Place Partner Article by Dr. Tony Phillips*

This year NASA has announced the discovery of 11 planetary systems hosting 26 planets; a gigantic cluster of galaxies known as "El Gordo;" a star exploding 9 billion light years away; alien matter stealing into the solar system; massive bullets of plasma racing out of the galactic center; and hundreds of unknown objects emitting high-energy photons at the edge of the electromagnetic spectrum.

That was just January.

Within NASA's Science Mission Directorate, the Astrophysics Division produces such a list nearly every month. Indeed, at this very moment, data is pouring in from dozens of spacecraft and orbiting observatories.

"The Hubble, Spitzer, Chandra, and Fermi space telescopes continue to make groundbreaking discoveries on an almost daily basis," says NASA Administrator Charlie Bolden.

NASA astrophysicists and their colleagues conduct an ambitious research program stretching from the edge of the solar system to the edge of the observable Universe. Their work is guided in large part by the National Research Council's Decadal Survey of Astronomy and Astrophysics, which identified the following priorities:

Finding new planets—and possibly new life—around other stars.

Discovering the nature of dark energy and dark matter.

Understanding how stars and galaxies have evolved since the Big Bang.

Studying exotic physics in extreme places like black holes.

Observing time on Hubble and the other "Great Observatories" is allocated accordingly.

Smaller missions are important, too: The Kepler spacecraft, which is only "medium-sized" by NASA standards, has single-handedly identified more than 2300 planet candidates. Recent finds include planets with double suns, massive "super-Earths" and "hot Jupiters," and a miniature solar system. It seems to be only a matter of time before Kepler locates an Earth-sized world in the Goldilocks zone of its parent star, just right for life.

A future astrophysics mission, the James Webb Space Telescope, will be able to study the atmospheres of many of the worlds Kepler is discovering now. The telescope's spectrometers can reveal the chemistry of distant exoplanets, offering clues to their climate, cloud cover, and possibilities for life.

That's not the telescope's prime mission, though. With a primary mirror almost 3 times as wide as Hubble's, and a special sensitivity to penetrating infrared radiation, Webb is designed to look into the most distant recesses of the universe to see how the first stars and galaxies formed after the Big Bang. It is, in short, a Genesis Machine.

Artist's concepts such as this one are based on infrared spectrometer data from NASA's Spitzer Space Telescope. This rendering depicts a quadruple-star system called HD 98800. The system is approximately 10 million years old and is located 150 light-years away in the constellation Crater.

*Credit: NASA/JPL-Caltech/T. Pyle (SSC)*

Says Bolden, "We're on track in the construction of the James Webb Space Telescope, the most sophisticated science telescope ever constructed to help us reveal the mysteries of the cosmos in ways never before possible." Liftoff is currently scheduled for 2018.

How long will the list of discoveries be in January of that year? Stay tuned for Astrophysics.

For more on NASA's astrophysics missions, check out http://science.nasa.gov/astrophysics/. Kids can get some of their mind-boggling astrophysics questions answered by resident Space Place astrophysicist "Dr. Marc" at http://spaceplace.nasa.gov/dr-marc-space.

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

1 Bolden made these statements in an April 20th editorial he co-authored with John Holdren, Director of the Office of Science and Technology Policy: *http://blogs.nasa.gov/cm/blog/bolden/posts/post_1334967201693.html*

# RTMC OR BUST

*By F. Jack Eastman*

Well, it's happened again. May. 2012 came to an end and the Riverside Telescope Maker's Conference (RTMC) at Camp Oakes in Big Bear, California beckoned. Usually the season is changing, trees just beginning to green up and the air heavy with the scent of lilacs but this year the season change was about 7 or 8 weeks early! The old van (Moby) got a clean bill of health, and I headed out Tuesday morning, the 22nd, and drove the same old route—I-70 to I-15 on to Barstow, then south, highway 247, to Lucerne Valley then up the 16%grades and hairpin turns on highway 18 to Big Bear. A couple of sour notes in the symphony this time were howling headwinds all the way from Vail, CO. to Barstow, CA. In Las Vegas, the "Land of Perpetual Highway Construction," there was a sign that said "I-15 closed at Russell Road." No other information, useful or not. Yes, the highway was closed, and there was no indication of a detour route. We were left to our own devices to figure out how to get back to the interstate! I did manage to get around the clot and back on I-15, no thanks to the Nevada highway department! We camped, again, at Halloran Summit with a low temperature of 50°F, and Wednesday morning bucked more howling winds on to Barstow and finally, to Big Bear City. La Paws, in Big Bear, is still there, serving up great beef enchiladas and the trimmings.

Thursday morning we arrived at Camp Oakes, then set up camp and our "observatory." There was one other telescope this year. Many of you know of my tiny 40mm Newtonian. A good friend, and at the time a colleague at the infant Celestron, made an even smaller one. We had talked about it and I suggested he bring it to RTMC. Joe said he had lost it many years ago in one of his numerous moves, but recently Joe said he had found it in a box of old car parts! I told him to restore it and bring it this year. He said "No, it's yours! You restore it and take to RTMC." He sent it out, I reassembled it and it was truly the smallest Newtonian reflector at RTMC (and probably everywhere else!) with a clear aperture of 23.5mm. (The label Joe put on it reads "Celestron 0.8") This is what happens when one seriously overdoses on aperture fever medicine.

Just as with last year, there were no formal activities until Friday evening. Thursday evening observing was reasonably good, although the seeing could have been better. Mars showed its polar cap intermittently; Cassini's division in the rings of Saturn was difficult, but observable. SQM* readings were around 21.2 to 21.35 which is not bad for being so close to the greater Los Angeles metroplex.

Friday a few vendors set up camp and again, there were no formal activities. Friday evening was an informal "show-and-tell." I wasn't fast enough to get the slides of the Chamberlin lens cleaning/mount overhaul to the "show-and-tell" presentations, so I guess they'll keep until next time. After the "show-and-tell" we went out to the telescopes. Observing was compromised by strong winds, not nearly as bad as last year, but enough to scare me off and put the 6-inch Clark in one of the sheds. It also got cold, about 20°F. Apparently the weather was bad, clouds, rain etc. all around us, but we stayed clear, at least for a while. The morning dawned with a layer of white . . . heavy frost or maybe even a dusting of snow!

One thing of note was the paucity of vendors, only seven, by one count, quite a contrast from years past when it seemed every astronomical vendor in the inner solar system was there. The number of participants was also markedly less, we think something like only 600 or so were in attendance. New this year was a greatly revised meal plan. Instead of a prepaid ticket they set up a pay-as-you-go cafe. They had greatly extended hours, so, for example, one didn't have to get up early after a night at the telescope to get breakfast.The portions were generous and the food was good, although the menu was somewhat limited. It really helped that we didn't have to keep rearranging the meeting hall between a cafeteria and lecture hall.

Saturday dawned with the traditional swap meet—lots and lots of "stuff" as usual. Believe it or not, all I bought were a couple of small 60-degree prisms—I guess I'm too well stuffed. The meal plan worked well, so there was no need to rush off or starve as breakfast went from something like 8:00 to 10 A.M.

Saturday's talks included a discussion of a 1.5-meter portable(!) telescope from Russ Genet who is a research scholar in residence at Cal Poly State University, an adjunct professor of astronomy at Cuesta College and the author of several books and articles on robotic telescopes. This instrument is designed only for photometry, there is no accommodation for visual use. Tim Thompson, past president of the Los Angeles Astronomical Society and member of the Mount Wilson Observatory Association discussed the Kepler mission's latest findings. This was followed in the afternoon by Larry Price, a post-doctoral scholar at Cal Tech, discussing LIGO (Laser Interferometer Gravitational Wave Observatory) and the search for the elusive gravitational waves predicted by Einstein's General Relativity. I had just finished Marcia Bartusiak's book Einstein's Unfinished Symphony, which discusses instrumentation and techniques of the search for these phenomena. No confirmed observation has yet been accomplished, hence "Unfinished Symphony". This talk was followed by Dean Ketelsen of the University of Arizona's Mirror Lab since its inception in 1990, discussing the making, care and feeding of monster 8.5-meter (335-inch) mirrors. Dean has been involved in the fabrication of four 3.5-meter, four 6.5-meter and (so far) four 8.4-meter mirrors, with more coming.

On a more serious note, Steve Edburg, the Master of Ceremonies of the RTMC told of the loss of several of our colleagues, among them: Tom Johnson, founder of Celestron and the person responsible for my nearly half century career in optical sciences; Tommy Cragg, resident solar observer at Mt. Wilson, telescope operator at Griffith and later astronomical observer at Siding Springs, Australia. Tom was an ace variable star and solar observer as well as mentor and teacher to many of us aspiring astronomers. He was awarded the G. Bruce Blair medal in 1963 and John Sanford, Orange County Astronomers and accomplished astrophotographer. He was awarded the G.B.B. in 1983. We also lost Valerie Vance-Goff, widow of the late master optician Bob Goff. Valerie was the sponsor of the Robert F. Goff lecture on Optics and Optical Design given at the RTMC. They will be sorely missed, but not forgotten.

Before the keynote speaker, the presentation of the prestigious G. Bruce Blair award was given to Jim Benet of the Orange County Astronomers for his outstanding work in public outreach. The award is presented each year to an amateur or professional astronomer for meritorious work in the field.

Saturday evening's keynote speaker, Bob Bower from Scotland, told of his search for Herschel's "40-foot reflector." Bob's knowledge of history, his storytelling skills and innumerable astronomical anecdotes made this very entertaining as well as informative. Touring Slough, England, he eventually did find the original location for this telescope, which is now under a parking structure in the middle of town. Bob has been an amateur astronomer since age 8, inspired by Patrick Moore's book Astronomy. He built his first telescope six years later. He is a past president of the Ayrshire (Scotland) Astronomical Society and a Fellow of the Royal Astronomical Society and is involved professionally with the U.K. aerospace industry. We were fortunate to get him as a speaker, as he makes frequent trips to the U.S. in connection with his work. This particular trip coincided with RTMC. After Bob's talk, we went, once again, out to the telescopes.

Observing Saturday evening was again compromised by strong winds, and again it was cold, about 21° F. The night stayed clear, but all around Camp Oakes, even in Big Bear -seven miles away it rained, snowed and blew. Saturday night was to be an "Open House" for the local residents of

# PRESIDENT'S CORNER

*(CONTINUED FROM PAGE 2)*

informing them of the COGCC regulation concerning lighting of drill sites. We have also offered to assist them in shielding or modifying their lights. As of this writing we have not received a response to this second letter. It has also been interesting to read the comments of some amateur astronomers in other areas of the Front Range basically suggesting we should not bother them with our complaints because oil-gas drilling operations are happening all over the plains. This, while some of their favorite observing sites on northern plains have already suffered the intrusion and been lost to observing. I find this reaction sort of like the frog being slowly brought to boil on a stove! Initially our letters and communication may fall on deaf ears or be pushed aside into their circular file, but the purpose of our letters is to change the conversation within these organizations so that the words and concepts of offensive light pollution at least become part of their vocabulary for a moment, and then for a minute and perhaps something they will eventually work into an hour discussion with their site managers and government regulators. If someone is standing on your foot while you're waiting in a line, you should at least politely ask them to move.

We wound up July with a great DAS members picnic which featured some good BarBQ and an outstanding line up of desserts and salads, along with good conversation with many friends under cooler, albeit cloudy skies. There were so many varieties of the tasty squares of Dark Matter (aka Brownies) I think next year we may have to have a Dark Matter competition to see which ones are the favorites. Thanks to all of you who brought so much good food and helped out with set up and clean up! We even spread a bit of our feast and did impromptu tours of DU's Historic (now 118 years young) Chamberlin Observatory for many appreciative alumni of M.I.T. who were picnicking across the street. Big Oil's Light pollution and wildfires have no effect on the good time we had!

**WINDSCREENS AT THE DARK SITE**

The windscreens were tested on the night of July 20th. The porous polyethylene 8x12-foot screens can be folded over for smaller equatorial scopes and Dobs, or extended to their full 8-ft height for larger scopes. On the night of July 21st, the wind screens allowed reasonably comfortable observing in high southerly winds with 22 mph gusts that would normally make observing impossible. They can be installed by one person and are intended to be removed and stowed at the end of an observing session. Virtually all high nighttime winds on clear nights at the dark site are southerly.

*Image courtesy Darrell Dodge*

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the area. No one, apparently, showed up as the weather was terrible everywhere but here at the camp. Folks coming up from Lucerne Valley, (highway 18), reported that cars going down were packed with snow!

Sunday morning the Western Amateur Astronomers held their Summer board meeting. One important item was to update all the member clubs contact information. All is well with the DAS: we're a paid member in good standing. We had enough time after the meeting to get to another superb presentation, again, by Bob Bower. He talked about 200 years of Naval and Telescope Making history. John Gilbert, an engineer at Dolby Laboratories, gave a demonstration of a wide, dynamic range display technology—a dynamic range of 19-20 f/ stops, translating to a range of over a million-to-one in brightness. John is the inventor of what promises to be an affordable new display technology that pushes way beyond the contrast range of human vision.

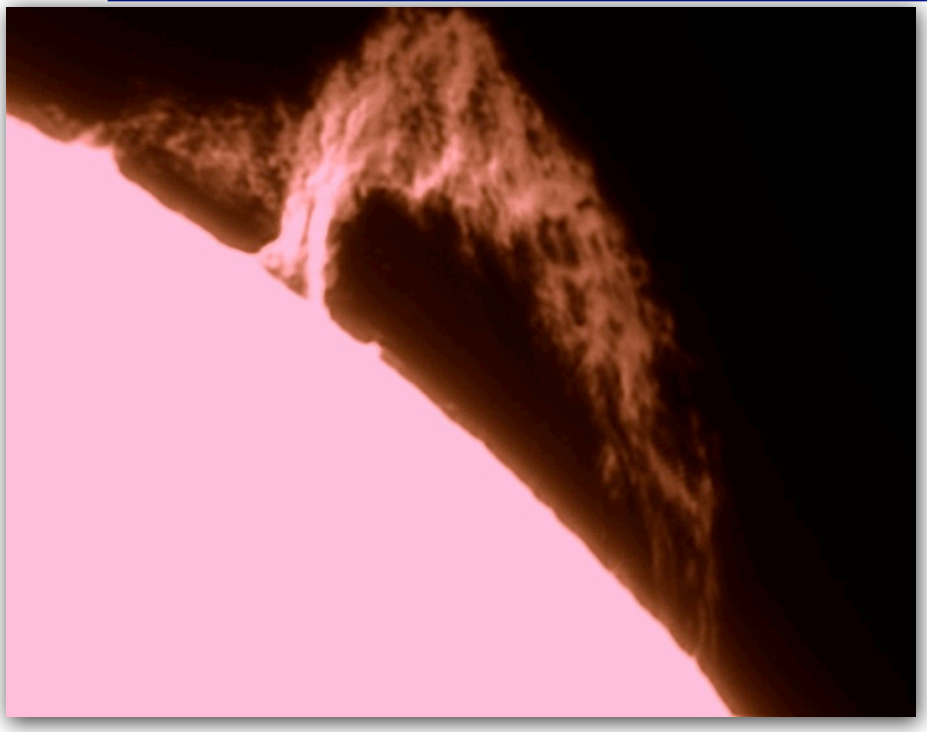
Sunday night's keynote speaker was to be Mike Brown, the man who killed Pluto, but he was unable to attend. Instead Jean Mueller, night assistant and astronomical observer gave a fun-filled series of anecdotes about her experiences at Mt. Palomar with the 48-inch Schmidt camera and the 200-inch telescopes. She talked of, among other things, the weather and instrumentation, and personalities, sometimes perverse, of astronomers and grad students. It was a very enjoyable "behind the scenes" snapshot of the goings-on at a great observatory.

The best observing of the conference was, perhaps, Sunday night. The seeing was very good, Cassini's and, possibly, Encke's divisions were visible with the 6-inch refractor, as well as the polar cap of Mars. Porrima, γ (gamma) Virginis, was an easy split (separation ~1.8 seconds). A number of folks came over and we searched up a bunch of deep-sky objects. What, with a 6-inch f/15 telescope? Yes! I mounted the "comet eyepiece," a 75mm Huygens with a field on the sky of 1.2 degrees, and hunted down M81, M82, M97 (Owl), and M108. Although the sky seemed bright in that region, these objects were easily seen. Turning the 'scope to the south, we picked up M4, M80 and NGC 6144, (Comet Eastman-Edwards-Gardner. See the Denver *Observer,* May 2010). With more magnification, globular clusters are really quite a sight.

It seemed that the bad weather lower down the mountain, which had kept the cloud cover and the L.A. basin light pollution at bay, had gone. This resulted in a brighter sky, especially to the west. The SQM* was 21.25-ish at zenith and 19.3 towards the west about 30 degrees up over the greater L.A. basin.

All too soon, it was over and time to pack up and head northeast. I spent Monday night in Beaver, UT., and had a relatively smooth trip back without too much heat. We had winds from Green River to Grand Junction, and then a really powerful tailwind from G.J. to Denver (45% better gas mileage than the way out)! The Colorado river was low in Glenwood Canyon and though the bike trail was above water, the wind would have made the bike ride through the canyon nearly impossible.

Many of the friends I was raised with back in California were in attendance at RTMC and made the event a great reunion for of all us old cohorts. All in all, a very good time was had by all, and yes, I'll do it again next year.



**HOLY SMOKES!!**

A huge solar prominence was on the sun's limb for two days.
Ron made this image on July 26, 2012, at 2:25 P.M. MDT. at his Cosmic Rock Observatory in Evergreen, CO. He used a 60mm Hydrogen Alpha Coronado filter on an 80mm f/7.5 ED with a 2.8 Klee barlow and PGR Scorpion camera. It was captured and processed with Astro IIDC and Photoshop CS3. There are about 155 frames stacked.

*Image © Ron Pearson*

# AUGUST SPEAKER: DANIEL GREENIDGE

Daniel Greenidge is a homeschooled junior high school student who has always had a love for the night sky. At age 14, after a few years of amateur observing, he began volunteering at Fiske Planetarium (CU-Boulder), where he was introduced to the academic side of astronomy. One year later, he started volunteering at the Little Thompson Observatory, where he works with all ages, explaining the night sky. Other interests include classical piano, backpacking, and chemistry. He resides in Loveland with his parents and lovely twin sister.

The Denver Astronomical Society
c/o Chamberlin Observatory
2930 E. Warren Ave.
Denver, Colorado 80210