

# OBSERVER

Newsletter of the Denver Astronomical Society  
*One Mile Nearer the Stars*



## Gear Up for Galaxy Season!

Just a few degrees south of the Big Dipper's handle lies the beautiful spiral galaxy M51 (NGC 5194) and its companion NGC 5195. Also known as the Whirlpool Galaxy, it's about 15 million light-years away in Canes Venatici. Joe's image was taken on March 10, 2008 with an SBIG ST-2000XM ccd camera on his 18-inch f/4.5 Newtonian. Exposures: 23/23/23/23 minutes LRGB.

Image copyright 2008 Joe Gafford

# SPRINGTIME IN THE ROCKIES

## A P R I L S K I E S

Inside The Observer

“Crescent Moon plows into Pleiades! Space Patrol scrambles in Red Alert! Seven Sisters disappear and reappear mysteriously! All-woman event

startles universe! Millions miss it while watching TV!” To witness this occultation look to the western sky at 7:45 P.M. Tuesday April 8. The dark eastern limb of the moon will cover up (some of) the Seven Sisters who will then reappear on the crescent side. The celestial lady Luna, aka Selene, is a mere quarter million miles away while the Sisters are 240 light-years away.

Try-Again date for the Messier Marathon is Saturday April 5. This may be one astro event where folks are not looking at Saturn, but the ringed wonder will be there in the south for those who have the time to look, right next to Regulus in Leo. Notice how nearly edge-on the rings have tilted.

While you're looking at Leo wander east, left, halfway over to the triangle that marks the hindquarters of the lion to find galaxies M95, 96 & 105, two spirals and an elliptical. Then keep going east to the triangle itself and look

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5 .....	New moon
12 .....	First quarter moon
20 .....	Full moon
28 .....	Last quarter moon

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# President's Corner

The elections are over and the banquet has passed. This year we catered the banquet and were able to hold costs down while enjoying the use of a great meeting place. We especially thank the Columbine Unitarian-Universalist Church for the use of their facilities.

In 1947, the DAS started as the Denver Telescope Making Club in the basement of Chamberlin Observatory, and we're still here! That makes this our 60th anniversary year. It coincides with the start of the Years of the Telescope and Astronomy. What does that mean? It gives us a lot of good ideas for the coming year.

We have always enjoyed the great support of the Department of Physics and Astronomy at the University of Denver and of Chamberlin Observatory's directors. We enjoy this rare privilege and honor to host outreach events at Chamberlin Observatory. Our work has engendered a deep sense of responsibility to goals we share to promote public awareness of astronomy in the community. We have helped

to raise close to \$500,000 to support the observatory and we are glad to see that work related to this latest grant is scheduled to finally begin next month.



**Wayne Green, DAS President**

The changes in the Executive Board were minor this year. Darrell Dodge is stepping down as Secretary and taking on the role of Astronomical League Coordinator (ALCOR) for the DAS. Over these past years Darrell has done a tremendous job organizing the position of Secretary and making some great improvements to our website, [www.thedas.org](http://www.thedas.org). He has been a strong supporter of the EKG Dark Site and all

*Continued on page 7*

APRIL		MAY	
4-6	EGK Dark Site Weekend— Messier Marathon 2	3-4	EGK Dark Site Weekend
12	Open House at Chamberlin Observatory ( <i>Begins at 7:30 P.M.</i> )	10	National Astronomy Day and Open House at Chamberlin Observatory ( <i>Begins at 7:30 P.M.</i> )
18	General Membership Meeting at Olin Hall ( <i>Begins at 7:30 P.M.</i> )	16	General Membership Meeting at Olin Hall ( <i>Begins at 7:30 P.M.</i> )
19	Earth Day (Make sure the Hummingbird feeders are up)	23	E-Board meeting at Chamberlin Observatory ( <i>Begins at 7:30 P.M.</i> )
25	E-Board meeting at Chamberlin Observatory ( <i>Begins at 7:30 P.M.</i> )	31-1	EGK Dark Site Weekend

*Public nights are held every Tuesday and Thursday evenings beginning at the following times:*  
 March 9 - April 14 at 8:00 P.M.  
 April 15 - September 1 at 8:30 P.M.  
 September 2 - March 8 at 7:00 P.M. at Chamberlin Observatory  
 Costs to non-members are: \$3.00 adults, \$2.00 children.  
 Please make reservations via our website ([www.thedas.org](http://www.thedas.org)) or call (303) 871-5172.

DAS Schdule

## Society Directory

- President:**  
Wayne Green (303) 530-1023  
Email: [president@thedas.org](mailto:president@thedas.org)
- Vice President:**  
Keith Pool (303) 718-7273  
Email: [vicepresident@thedas.org](mailto:vicepresident@thedas.org)
- Secretary:**  
Ron Pearson (303) 670-1299  
Email: [secretary@thedas.org](mailto:secretary@thedas.org)
- Treasurer:**  
Brad Gilman (720) 488-1028  
Email: [treasurer@thedas.org](mailto:treasurer@thedas.org)

## Executive Board Members

- |                                  |                 |
|----------------------------------|-----------------|
| Jack Eastman                     | Ron Mickle      |
| Joe Gafford                      | David Shouldice |
| Stuart Hutchins                  | Bryan Wilburn   |
| Frank Mancini                    | Dan Wray        |
| Steve Solon, Past President      |                 |
| President Emeritus, Larry Brooks |                 |

## Committees

- Van Nattan-Hansen Scholarship Fund**  
Ron Pearson (Chair)  
P.O. Box 150743  
Lakewood, Colorado 80215-0743
- EKG Dark Site Committee:**  
Wayne Kaaz (Chair) (303) 840-1549  
Email: [kaazmos@msn.com](mailto:kaazmos@msn.com)
- IDA Representative:**  
Dr. Robert Stencel
- Public Outreach Committee:**  
Ron Mickle (Chair)  
Bryan Wilburn (External Outreach Coordinator)  
Email: [bwilburn@4dv.net](mailto:bwilburn@4dv.net) (303) 542-5137
- Student Astronomy Committee:**  
Naomi Pequette (Chair)

## Volunteers or Appointed Representatives

- ALCOR:**  
Darrell Dodge  
Email: [alcor@thedas.org](mailto:alcor@thedas.org) (303) 932-1309
- IDA Representative: (International Dark Sky Association):**  
Dr. Robert Stencel
- Newsletter:**  
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**The Observer is available in color PDF format from the DAS website.**
- Website:**  
Darrell Dodge  
**DAS Information Line:**  
(303) 871-5172  
**DAS Correspondence:**  
Denver Astronomical Society  
Chamberlin Observatory C/O Wayne Green  
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.*

thedas.org



# Chuck Carlson to Speak at the April General Meeting

by Chuck Carlson and Keith Pool

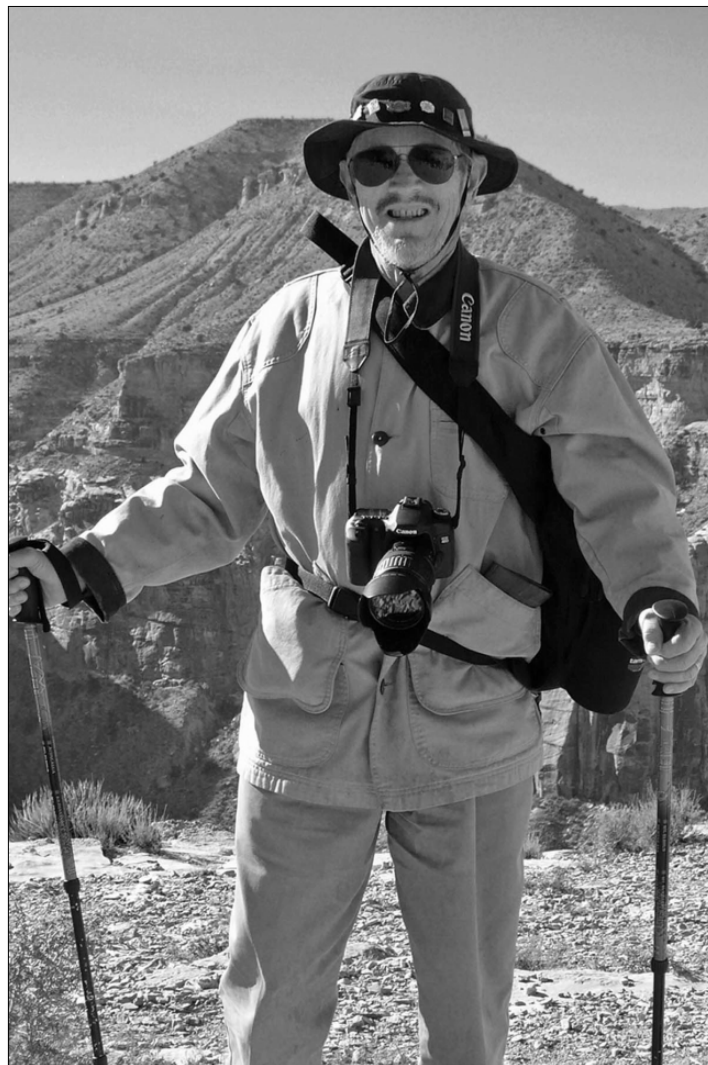
Chuck Carlson is a long time DAS member and former treasurer. He retired after 34 years as a member of the History Department at the University of Denver (DU). He now has time to follow his hobby interests which, in addition to astronomy, include photography and travel. As a matter of fact, he has only recently returned from a trip to the Galapagos Islands. His main observing interests are the solar system and double stars. He is also the recipient of the Astronomical League's Double Star observing award. Perhaps, however, he is best known in the amateur astronomy community as the inventor of the so-called "Denver Observer's" Chair, which many have built using plans available on the internet. I recently returned from a trip to Georgia myself, where I had the great pleasure to observe with the members of the Middle Georgia Astronomical Society, and the "Denver Chair" came up in conversation. Amateur observers in Georgia have built and used them, too.

Consistent with his professional background, Chuck continues to read widely and one of his favorite subjects is the history of science and especially the history of astronomy. At an astronomy program offered by Colorado State University (CSU) at its Pingree Park campus last summer, he learned of a recently published book which alleges that one famous astronomer was murdered by an even more famous colleague. The title of the book was *Heavenly Intrigue*. The book has not been reviewed in either of the two leading popular astronomy magazines and this bit of history is hardly

known among amateur astronomers. Who were these great astronomers? Did one actually murder the other, and if so, how good is the evidence? Why is this purported homicide not better known? To answer these and other questions, you will want to be sure and not miss the April General meeting. The General meeting is scheduled to be held in room 105 at Olin Hall on the University of Denver Campus on Friday, April 18th at 7:30 P.M.

Also, all of you would-be show-and-tellers: due to the success of the November "Show-and-Tell," and also the limited amount

of people who were able to present at that meeting, the E-Board has decided to have another "Show-and-Tell" at the May 16th general meeting. We ask that you please limit yourself to 10 to 20 minutes presentation time, and if you would like to reserve in advance, please feel free to call Keith Pool at (303) 718-7273 or e-mail your ideas to [stargeezer9@msn.com](mailto:stargeezer9@msn.com).



**Chuck Carlson**

Effervescent long-time DAS member will speak at the upcoming General Meeting on April 18.

Check out the revamped Astronomical League website for observing ideas, information on observing awards and access to the new online store!  
[www.astroleague.org](http://www.astroleague.org)

updates

# 35 Years of Support to Physics and Astronomy Students: The Van Nattan-Hansen Scholarship

by Ron Pearson and Darrell Dodge

If you are a student member of the DAS and either a graduating high school senior or college undergraduate majoring or planning to major in Astronomy, the physical sciences or mathematics, you are invited to apply for the DAS Van Nattan-Hansen Scholarship. A preference will be given to Astronomy majors. The scholarship fund was started many years ago by William Van Nattan's family, and grew substantially with additional contribution from Charles Hansen's family.



**William R. Van Nattan (1921-1971) left,** loved astronomy. His enthusiasm continues to enrich, enlighten, and capture the interest of others

through his many and varied contributions to astronomy. He was a founding member of both the Denver Astronomical Society (DAS) and the National Amateur Astronomers (NAA). As chairman of the Denver Planetarium Committee in 1955, he was instrumental in providing a planetarium for the people of Denver at the Natural History Museum. For many years Van Nattan assisted in teaching astronomy at the University of Denver's Chamberlin Observatory.

**Charles Hansen, next column upper right,** was also an avid supporter of Denver astronomy. Upon his death he left a significant portion of his estate to the Denver Astronomical Society for use in supporting the Fund.

To honor their memories, this scholarship fund was established by the Denver

Astronomical Society in 1973. In the 35 years since, the scholarship has assisted 26 students of astronomy and physical sciences or mathematics, providing over \$28,000 in assistance for their education. Through the gifts and contributions of many friends of astronomy, the Fund continues to provide scholarships to high school and undergraduate students.

Each year approximately two \$1000 scholarships may be awarded to students in good academic standing who have demonstrated intent and merit to pursue a career in the physical sciences or mathematics. Priority shall be given to students of astronomy, astrophysics and related fields.

## Catching Up With Previous Van Nattan-Hansen Scholarship Winners

A recent internet search of scholarship winners from the 1970s and 1980s found at least five who have gone on to become professional astronomers or physicists who could be positively linked to the scholarship. One Van Nattan-Hansen graduate went on to a career in optics that wasn't related to astronomy. Thumbnail sketches are provided below, together with the year(s) of their scholarships and the amounts (if known).

**Dr. Mark Bottorff** (1978, amount NA; 1979, \$200.00; 1980, \$250.00)

Dr. Bottorff was a DAS Associate member in the 1970's, and is familiar to DAS members as a companion at local star parties and a frequent speaker at DAS general



meetings. He is an Assistant Professor of Southwestern University, Georgetown, Texas. Mark's research over the years has focused on quasars, the super massive black holes that serve as the most powerful energy sources in the universe. He began studying quasars while earning his Ph.D. and working as a research assistant at the University of Kentucky. He stayed for three years as a post-doctoral researcher and wrote papers based on quasar information gathered by the Hubble Space Telescope.

**Dr. Brad Schaefer** (prior to 1979; amounts NA)

Dr. Schaefer received his Ph.D in Astronomy and Astrophysics from MIT in 1983. He is now a Professor of Physics and Astronomy at Louisiana State University. A prime interest of his research has been to use the photometry of exploding objects to get results of interest for cosmology. He has recently been involved in the exploration of gamma-ray bursts (GRBs) as "standard candles" for use in cosmological investigations out to red shifts from  $\sim 0.2$  to 20. This allows GRBs to be light sources for the detection of the Gunn-Peterson effect, the creation of a Hubble Diagram from  $0.2 < z < 10$ , and measuring the star formation rate of the Universe out to  $z \sim 20$ .

**Dr. C. Nick Arge** (1981, \$500.00; 1983, \$400.00)

Dr. Arge is a prize-winning researcher who does work in the areas of coronal and solar wind modeling for the purpose of forecasting the solar wind near Earth. Dr. Arge received his B.S. in Physics at the University of Arizona in 1985, with support from the Van Nattan-Hansen scholarship. He went on to receive an M.S. Degree in Physics at the University of Michigan in 1988, and a Ph.D. in Physics in 1997 at the University of Delaware. He





worked for the University of Colorado and NOAA in Boulder, Colorado from 1996 to 2003. He has worked at the Air Force Research Laboratory, Space Vehicles Directorate, since 2003 and is an Adjunct Associate Professor in the Department of Physics and Astronomy at the University of New Mexico.

**Joseph Pesce** (1984, \$300.00; 1986, \$575.00; 1987, \$500.00)

Joseph Pesce is on the faculty of the Department of Physics and Astronomy at George Mason University, Fairfax, Virginia. His recent research includes observations of the orbiting Chandra observatory of the X-ray environment of a sample of 6 BL Lacertae objects (active galaxies characterized by rapid and large amplitude flux variability and significant optical polarization.)

**Anthony Gojanovic** (1982, \$450.00; 1983, \$400.00)

Mr. Gojanovic's recent work included a simulation of the "Survival Probabilities of a Lander Mission on Mars" for the University of Colorado, Denver.

**James Zavislan, Ph.D.** (1980, \$500.00; 1981, \$350.00)

Dr. Zavislan chose not to enter the field of physics and astronomy, but used his B.S. Degree in Optics and his Ph.D. in Optics in 1988 (from the University of Rochester) to do research improving the performance of optical imaging systems for biomedical, material science, and remote sensing applications. He is an inventor or co-inventor on 42 issued U.S. patents, an author or co-author on 20 papers, and the co-editor of a book on optical systems. His current area of research is skin imaging. He holds two associate professorships at The Institute of Optics, University of Rochester, in New York.

Recent winners of the scholarship include Debra Davis and Stephanie Pahl, now an instructor of mathematics at Metro State University in Denver. Winners of the scholarship in 2007 included DAS Student Member and Littleton High School Graduate, Naomi Pequette, and Bear Creek High School senior Sara

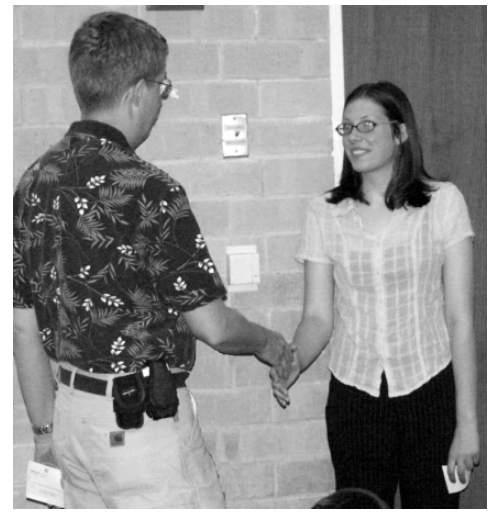
Simon. This year Naomi is pursuing her undergraduate degree at DU, and Sara Simon is pursuing her undergraduate degree in Astronomy at CU. Each received a \$1,000 scholarship award.

### Help Find Information on Previous Scholarship Winners

A list of all the scholarship winners is provided below. If you know career or contact information about any of these people (especially those who are not discussed in this article), please contact Ron Pearson, Chair of the Van Nattan-Hansen Scholarship Committee:

Nick Arge  
Mark Bottorff  
Debra L. Davis  
Eric Elliott  
Lewis D. Funk  
Gary Gardner  
Anthony Gojanovic  
Leroy Guatney  
Michael Kraeski  
Therese A. Ostrowski  
Stephanie Pahl  
Naomi Pequette  
Joseph Pesce

Elizabeth Phillips  
David Polluck  
Matthew Puccio  
Allen Robie  
Alan Rosen  
Bradley Schaefer  
Renee Schilling  
Scott Siegel  
Sara Simon  
Rachel Titter  
Phillip Todd  
Peter Vallero  
James Zavislan



**Sara Simon with Wayne Green**

### Awards and Judging

Scholarship awards shall not discriminate on the basis of race, color, sex, age, ethnic or national origin, religion, or disabilities. The decision of the Van Nattan-Hansen Scholarship Committee shall be considered final.

A link to the DAS Scholarship webpage also contains the application information: <http://www.thedas.org/vannattan.html>.



**Naomi Pequette with Wayne Green**

**Applicants will only be considered if their information is received no later than May 1st. Awards will be made by July 1st. Please mail to:**

**Ron Pearson, Chair Person  
The Van Nattan-Hansen Scholarship Committee  
P.O. Box 150743  
Lakewood, Colorado 80215-0743**

April is Scholarship Application Time—  
Due Date is May 1, 2008.  
How To Apply

Applicants must either be graduating high school seniors or undergraduate college students in good standing. Their enrollment must be equivalent to a half-time load for the academic term as defined by the institution. Applicants will be considered no more than 5 times for a fulltime student and 8 times for a half-time student.

All requests for consideration should be accompanied by the following information:

- Transcripts showing a grade point average of at least 3.0 on a 4.0 scale (or equivalent)
- A dated and signed letter of intent demonstrating the applicant's interest and the declared major
- Letters of recommendation from at least 2 reputable sources

Information provided by all applicants becomes the property of the Van Nattan-Hansen Scholarship Committee. Please send copies of required information as appropriate. Documents cannot be returned.

scholarship time

Continued from page 1

just under it for four galaxies M65 and 66, and NGC3628 and 3593, all spirals. Now you will have done 5% of the Messier Marathon already! If you look farther east from Leo a bit later in the night you may see Arcturus rising in Bootes. Halfway between the triangle of Leo and Arcturus and just a bit north is the fuzzy glow of Mel 111, a star cluster in Coma Berenices (Bernice's Hair) which is what gives the constellation its name. Now a bit down towards Arcturus is M64, another spiral galaxy.

More galaxies are to the north, nearly overhead in the Big Dipper. You probably remember the M81/82 pair. Imagine a diagonal line from Ursa Major's gamma star to its alpha in the pan of the dipper, then extend this line the same distance farther to find the galaxies. M81 is a Grand Design spiral while 82 is a starburst galaxy seen edge-on. Now go to the two stars at the end of the handle and estimate 2/3 of their separation distance, then imagine that distance down from the end star to locate M51 the whirlpool, the galaxy with the blob at the end of one arm (see page 1). That blob is actually NGC 5195, a smaller galaxy just passing



**Two-fer!**

At 27 million light-years away, M101 is the matriarch of a family of nine surrounding galaxies, exerting her influence most visibly on distorted NGC 5474, a dwarf galaxy 44 arc-minutes to her southwest. Steve's LRGB composite totals 5.5 hours through an 80mm Stellarvue refractor and SBIG ST-8e CCD camera.

Image copyright Steve Solon

by. A bonus galaxy NGC 5198 is south of this pair. Along the bottom of the pan we find faint spirals M109 left of gamma and 108 left of beta, and the Owl Nebula, M97, one of the largest planetaries, just below and left of 108.

**Meteor washout:** The Lyrids will be washed out the morning of April 30 by the almost-full Moon. By night-

fall the same day one can see Mars over in the western sky near Pollux, one of the the two stars marking the heads of the twins of Gemini, where you can compare their color and brightness. Both Mars and Pollux will be a reddish magnitude 1.2.

Check out page 54 in this month's *Astronomy* for how to find the elusive and ephemeral Purbach Cross, aka Werner X, at the terminator on the face of the moon at 6 P.M. on Saturday April 12, the night of the DAS Open House at Chamberlin Observatory. This is a phenomenon new to me. Of course the sky will be light at this time but the seldem-seen cross should still be visible. Purbach and Werner were used telescope salesmen during the reign of Ferdinand IV.—*Dennis Cochran*



Image copyright David Wolf 2008

**A Bright Blue Snowball**

NGC 7662 in Andromeda is a "bright, slightly elliptical planetary nebula" (*Burnham's Celestial Handbook: An Observer's Guide to the Universe Beyond the Solar System*). With a small telescope it appears almost stellar but it reveals itself with larger scopes. The central star is difficult to observe visually, but as we can see, David managed to image it nicely.





## President's Corner (continued)

the while earning the prestigious Master Observer Award from the Astronomical League.

I have been involved with the E-board for the past five years. It is a real pleasure to serve the DAS with people who have a deep commitment to the work we do and the wisdom and patience to guide our volunteer organization. My thanks to this great board and I can say we look forward to the opportunities of this next year!

April 12th is the next Open House and it coincides with the International festive party "Yuri's Night"—celebrating Yuri Gagarin's first manned space flight. We are considering taking

the party to the people with some "Dobs" on street corners as well as hosting a good time for the public at Chamberlin.

The MARS (Mountain Area Research Section) Region of the Astronomical League has completed its election cycle with DAS's Ginny Kramer as the Vice-Chairman, Longmont Astronomical Society's Vern Raben as the Regional Representative, Gene Schimerhorn as the region's treasurer and myself as the Chair. The League is continuing to focus on ways to improve its service to amateurs and the community at large—so send any ideas Darrell Dodge, DAS's ALCOR.

We owe a special vote of thanks to Jerry Sherlin for organizing and conducting the MARS election.

I will be traveling to RTMC and SAS at Big Bear, CA later in May, on to the AAS summer meeting in St. Louis in early June, and then to the 2008 Astronomical League Convention in July. I am very interested in developing ideas to promote amateur astronomy and community science outreach. I am soliciting your ideas towards these ends. Please feel free to email or call with your ideas.—*Wayne Green*

## DAS Imager Profile: Steve Solon

*Beginning with this issue, we present a monthly series that may answer questions you have about astro-imaging. Initially we'll highlight photographers whose images you've come to know in the pages of the Observer, and then start a question and answer forum. Please send your questions to the editor at [p\\_kurtz@comcast.net](mailto:p_kurtz@comcast.net).*

With an ever-increasing number of astro-imagers coming into their own, it's becoming a bit tough to find those who actually shoot with film—real film. There may even be those who shot with glass plates, but we'll stop at the 35mm stuff.

The DAS' Steve Solon has been imaging for better than 20 years, beginning in Los Angeles, where the skies are fairly ideal for planets, but horrid for deep sky work. Thus would Steve make his way up Mount Wilson to the Chileo campground and the jet-black skies that impressed Edwin Hubble way back when. Using an older Celestron 8-inch SCT and Kodak Royal Gold film, Steve's first pictures were, in his own words, "... pieces of luck." As his guiding technique improved, the stars gradually became rounder, the colors richer, and the trips up the mountain more meaningful.

Returning to Colorado in 1993, Steve and his wife, Leslie, settled in southwest Littleton; Steve joined the DAS soon after that, becoming active as a scope operator and lecturer at Chamberlin Observatory. He has been coerced—uh, elected president twice, vice-president once and served as chairman of the EGK Dark Site Committee, which he helped found

in 1997 with the late Ed Kline and fellow members Wayne Kaaz and Larry Brooks, among others.

Prior to the DAS' EGK Dark Site, Steve and fellow members Terry Chatterton and Jon Goldberg pooled resources and built a comfortable observatory on Terry's property just outside of Kiowa, 55 miles southeast of Denver. There, armed with an 11-inch SCT and the then-new SBIG ST-6, Steve began the transition from film to digital, always wondering if one would ever completely replace the other. Terry moved to New Mexico in 2000 and the observatory was dissolved, prompting a rethink of strategies.

A 1999 article by Connecticut astroimager Robert Gendler about imaging from the suburbs (and a near-miss by a drunk driver on highway 86 east of Elizabeth) convinced Steve that one could work from one's home, sacrificing black skies, but saving fuel and preventing the possibility of nodding off at the wheel on late-night drives, thus calming wife Leslie's nerves.

The only condition to putting an observatory in their yard was that it should be the same color as the house—pale blue. The folks



**Steve Solon in His Backyard Observatory**

at Astro Haven domes were very accommodating, and the neighbors still wonder what Steve actually does behind the fence in the backyard in that "blue thing"—he tells them he tests missiles.

Having used an array of instruments—the 11-inch SCT, a 12.5-inch RC and his current wide-field 80mm Stellarvue refractor, Steve has enjoyed the evolution of imaging, even as his local skies have deteriorated.

Currently, Steve has not been seen much by the DAS due to a very early morning schedule, but his dulcet vocal tones may help you negotiate the tough spots on your drive to work—he writes and reports news and traffic for many of the local TV and radio stations.



## About the Denver Astronomical Society

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 a 501(c)(3) tax-exempt corporation and has established three tax-deductible funds: the Van Nattan-Hansen Scholarship Fund, the Public Outreach Fund, and the Edmund G. Kline Dark Site Fund. To contribute, please see the bottom of the membership form for details.

More information about the DAS, its activities, and the special tax-deductible funds is available on the DAS web site at [www.thedas.org](http://www.thedas.org).



**APPLICATION FOR MEMBERSHIP TO THE  
DENVER ASTRONOMICAL SOCIETY**

New       Renewal

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone numbers: Home (    )      Work (    )

E-mail Address: \_\_\_\_\_

Occupation: \_\_\_\_\_

Other Interests: \_\_\_\_\_

(Students Only) School: \_\_\_\_\_      Grade: \_\_\_\_\_

Do you want to download the newsletter in PDF format from our website instead of by postal mail?  
Yes       No

Do you want the above information excluded from the yearly roster?  
Yes       No

*Please Circle All That Apply:*

Regular Membership: \$35	Students: \$12 ( <i>Students under age 23</i> )	\$ _____
Astronomy Magazine/\$34 and/or Sky & Telescope Magazine/\$32.95		\$ _____
Van Nattan Scholarship Fund		\$ _____
Public Outreach Fund		\$ _____
DAS Dark Site Fund		\$ _____
Total Amount Paid		\$ _____

*Please send all checks to Brad Gilman, DAS treasurer, 7003 S. Cherry St., Centennial, CO 80122-1179. Please make donations to the DAS Dark Site with a separate check, payable to the "DAS Dark Site Fund." For DAS Membership and other funds, including new-member magazine subscriptions, please make amounts payable to the "Denver Astronomical Society." DAS RENEWALS ONLY: you may now send your Sky & Telescope subscription funds directly to the magazine's subscription service, using the renewal form sent to you.*



## Denver Astronomical Society

c/o Chamberlin Observatory  
2930 East Warren Avenue  
Denver, Colorado 80210

