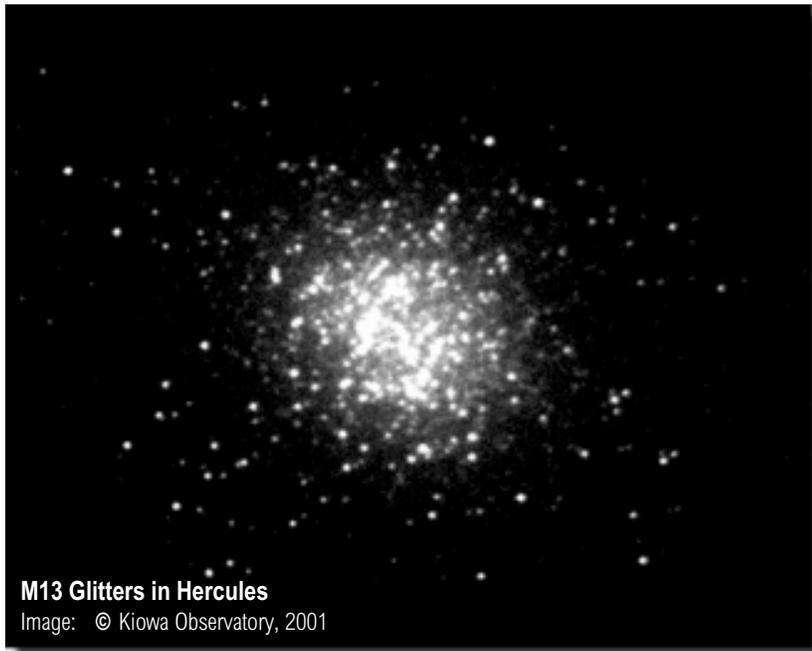


# DENVER OBSERVER

Newsletter of the Denver Astronomical Society

*One Mile Nearer the Stars*



M13 Glitters in Hercules  
Image: © Kiowa Observatory, 2001

### Christmas Ornament in July

Dangling in the dark all night is the brightest globular cluster in the Northern Hemisphere—the Great Globular Star Cluster, M13—in Hercules. One of the most spectacular astronomical targets in the sky, this globular cluster probably contains more than one million stars.

Try to imagine living on a planet orbiting a sun inside a globular cluster. Your skies would be filled with thousands and thousands of brilliant stars so bright there would be no night as we know it. People living in such a system would have no idea that the universe is filled with other galaxies. What do you suppose their astronomical progress might be like?—*Ed.*

## Stellar Fireworks Dazzle the Night

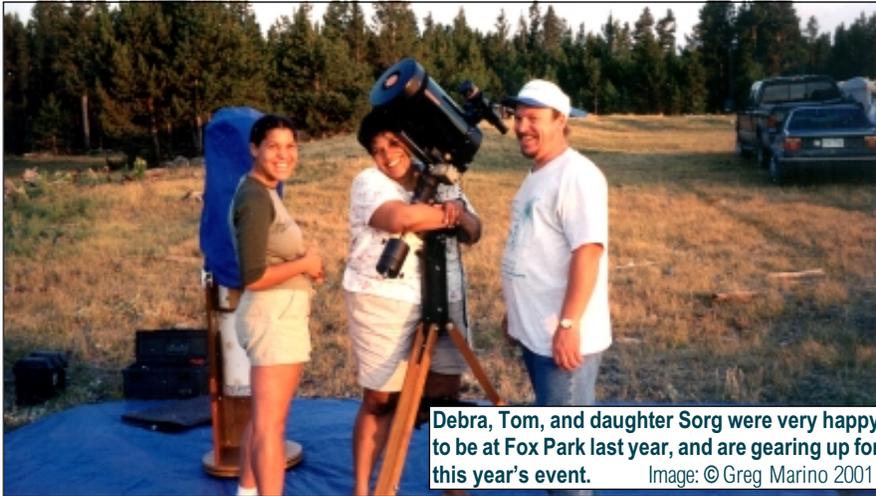
**Inside The Observer**

- President's Corner* ..... 2
- Schedule of Events* ..... 2
- Officers* ..... 2
- Observers Deck* ..... 3, 4, 5
- Feature Story* ..... 4
- DSS Guidelines* ..... 5
- MARS Convention* ..... 6
- July Speaker* ..... 7
- Odds 'n Ends* ..... 7
- Membership Info.* ..... back

### J U L Y   S K I E S   2 0 0 1

**T**here are 11 planetary conjunctions this year and two of them take place this month. Mercury and Jupiter are less than 2° apart in the early morning sky of July 12, and during the late night hours of the 14th and early hours of the 15th, Venus is 50 times brighter than Saturn which lies less than 1° away. Aldebaran complements the duo by creating a lovely triangle with them such that they all fit within a 5°-wide circle—Get out the cameras! Mars is still the stellar performer for the month, however, and tantalizes the dimmer Antares to its right before it sets in the early morning. You'll notice brilliant Mars dimming over the next few weeks, but by month's end, it's still brighter than Sirius. Within the final week of July, watch for the Delta-Aquarid meteors after midnight.—*Ed.*

5	..... Full moon,		<b>Left: Mars was an obvious target on June 7, 2001.</b> Image: ©David Shouldice, 2001
	.. Partial Lunar Eclipse, but not for us.		
13	..... Last quarter moon		
20	..... New moon		
27	..... First quarter moon		



Debra, Tom, and daughter Sorg were very happy to be at Fox Park last year, and are gearing up for this year's event. Image: © Greg Marino 2001

## PRESIDENT'S CORNER

Some of us have experienced the joy of having to pay for parking at the General Meeting at Olin hall. Yes, the university is charging us a buck to park in the lot near Olin Hall. We have gotten away with parking there for several years, however they just hired a night parking guard and the lot will be patrolled from now on.



On the plus side, we are now preparing to move forward with this summer's project at the Dark Sky Site. We are planning to put in six more pads and get them wired. We will need some

volunteers to assist with the concrete work. We will be glad to train you. If you have had a chance to enjoy the site, we would love for you to help us get some of the work done this summer. If you have not been out there, please take advantage of this wonderful experience. If you can volunteer, please send me an email or call me on the phone and I will get it to the right people.

Another service for members who are new to using telescopes is that we can help you learn to use that new scope. Just bring it to the Open House, set up by the Outreach and ask someone at the desk to get someone to help you.—Larry Brooks, [Lbrooks100@aol.com](mailto:Lbrooks100@aol.com), (303) 986-5255

## DAS Schedule

### JULY

- 6 E-Board meeting, 8 P.M.
- 20-22 Dark Sky Site Weekend, Montana Star Watch
- 27 General Meeting at Olin Hall, DU, 7:30 P.M.—Speaker: Clark Chapman, SWRI, "Near-Earth Asteroids and Impact Hazards." (See Page 7)
- 28 DAS Picnic/Open House, 4 P.M.

### AUGUST

- 3 E-Board meeting, 8 P.M.
- 16-18 WUTS—Fox Park
- 17-19 Dark Sky Site Weekend
- 24 General Meeting at Olin Hall, DU, 7:30 P.M.—Speaker: Roger Clark, "Results from the Cassini Encounter with Jupiter, and Plans for the Saturn Orbital Tour."
- 25 Open House

Public Nights are held every Tuesday and Thursday from 8:30 P.M.

at Chamberlin Observatory

Costs to non-members are: \$2.00 adults, \$1.00 children  
Please call (303) 871-4333 for reservations.

## DAS Officers

### President:

Larry Brooks (303) 986-5255

Email: [LBrooks100@aol.com](mailto:LBrooks100@aol.com)

### Vice President:

Patti Kurtz (303) 948-5825

Email: [pkurtz@starfirecreations.com](mailto:pkurtz@starfirecreations.com)

### Secretary:

Ron Pearson (303) 670-1299

Email: [rpearson@ecentral.com](mailto:rpearson@ecentral.com)

### Treasurer:

Chuck Carlson (303) 744-7331

Email: [chcarlo@du.edu](mailto:chcarlo@du.edu)

### ALCor:

Jerry Sherlin (303) 680-6894

Email: [SHERLINJ@aol.com](mailto:SHERLINJ@aol.com)

### Chief Observer:

Jack Eastman

## Executive Board Members

Ted Cox

Jerry Sherlin

Jack Eastman

David Shouldice

Joe Gafford

Steve Solon

Greg Marino

Dan Wray

George Jones, Past President

### DAS Information Line:

(303) 986-5255

### DAS Correspondence:

Denver Astronomical Society

c/o Larry Brooks

3686 South Depew, #8

Denver, Colorado 80235

### Van Nattan Scholarship Fund

P.O. Box 150743

Lakewood, Colorado 80215-0743

### Webmaster:

Terry Chatterton

Email: [Kiowapages@aol.com](mailto:Kiowapages@aol.com)

### Newsletter:

Denver Observer editor, Patti Kurtz

StarFire Creations Unlimited

(303) 948-5825

The Observer is available in color

PDF format from the DAS website.

The Executive Board conducts the business of the DAS at 8 P.M. at Chamberlin Observatory. Please see the Schedule of Events for meeting dates. All members are welcome.

# www.denverastro.org

### The Real Planet of the Apes?

In July of 1976, the Viking Orbiter 1 acquired the inset image, part of the Cydonia region of Mars, as it searched for possible landing sites for the Viking Lander 2. Among the photos of various buttes and mesas was the famous image that included a face-like hill—The rest is history. This photo became, for some people, absolute proof that Mars hosts intelligent, extraterrestrial life because the feature was “obviously” artificially created. See the “Face on Mars” page at <http://www.msss.com/education/facepage/face.html> which was created to further educate people on this region.

Due to the continuing interest in the area, the Mars Global Surveyor points its Mars Orbital Camera (MOC) at it and photographs the region every time it flies over it. The large image to the right is the latest such image, made by the MOC in April, 2001. You can see more images at [http://www.msss.com/mars\\_images/moc/extended\\_may2001/face/](http://www.msss.com/mars_images/moc/extended_may2001/face/).

While continuing to return spectacular images of the Martian surface, this incredible and versatile camera has been also been used to search for the Mars Polar Lander that “went missing” on Mars during its landing attempt on December 3, 1999.—Ed.



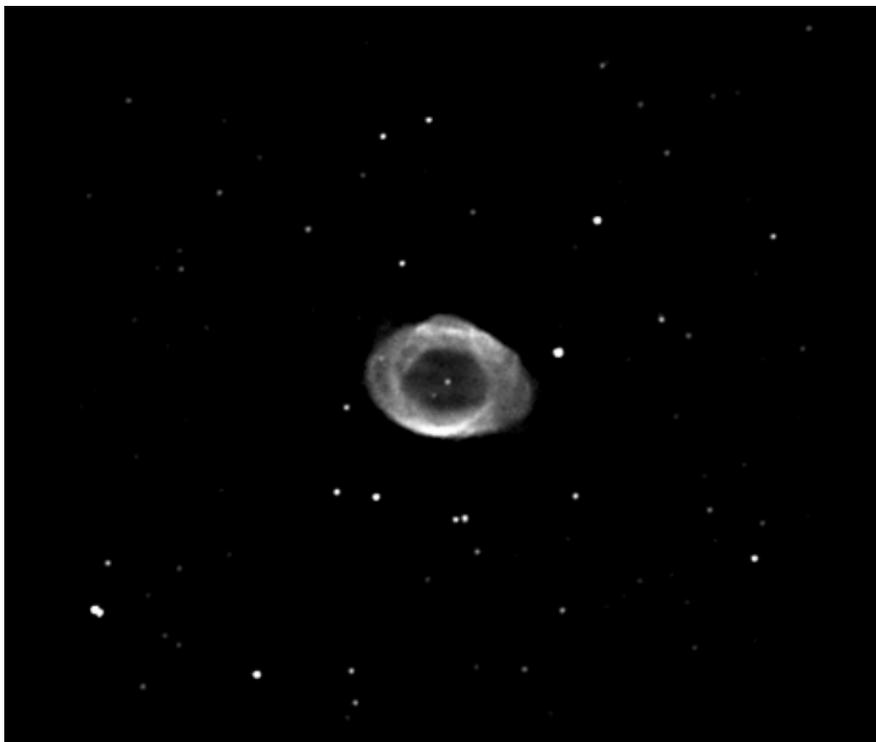
*Sky & Telescope sends only one notice before subscriptions end. The DAS sends only one issue of The Denver Observer after dues expire. The cost of magazines (Astronomy and Sky & Telescope) is in addition to the annual dues. For questions concerning memberships, please contact DAS Treasurer, Chuck Carlson (chcarlo@du.edu). See the back page of this newsletter for more information.*

### Engineer Needed!

We are in desperate need of a State Certified Electrical Engineer to sign off on our work at the Dark Sky Site. This person needs to be knowledgeable about state building codes. If you or someone you know can help us, please call or email:

Larry Brooks  
Lbrooks100@aol.com  
(303) 986-5255

During its death throes, the central star of the Ring Nebula (M57) sloughed off its outer layers and became a planetary nebula. Observing the central star is a challenge. Image: © Steve Bell 2001



### Note from the editor:

Newsletter contributions (ccd and film astrophotos, members with telescopes, star party candid photos, short observing anecdotes, observing and imaging tips, etc.) are welcome and encouraged. This is your chance to strut your stuff! **Please submit by the 15th of each month as follows:**

**Film:** Glossy prints by mail\*\* or scanned and uploaded (high res.) to the listserve upload area.

**CCD:** Uploaded to the listserve upload area (resolution as high as possible, please).

**Text:** Articles should be no more than 250 words, please. Paste into an email and send to me at: [pkurtz@starfirecreations.com](mailto:pkurtz@starfirecreations.com).

If you don't receive a confirmation email from me, I didn't get your email. Also, be sure to let me know if you've uploaded a file. Thank you!

\*\*Patti Kurtz (call for mailing address)  
(303) 948-5825

*All articles and images are © the author or photographer, and may not be reproduced without their written permission—Ed.*

# observers deck

## Directions to the Dark Sky Site

*The DAS Deer Trail Dark Sky Site (DSS) is about 60 miles east of the "mousetrap" in downtown Denver.*

Take I-70 east to the Deer Trail exit (exit 328), turn left at the end of the exit ramp, and turn left again on CR 217 (after the Texaco station). Take CR 217 just over 1/2 mile, and turn right (east) onto CR 34. Stay on CR 34 about 6 miles until you get to CR 241. Turn left (north) onto CR 241 and continue about 1.5 miles – you'll see a culvert with a wide gate on the right (east) side of the road.

*Directions to DSS from Denver, arrival from the North (for after-dark arrivals):*

Take I-25 eastbound to exit 316 (Byers). Turn left at end of ramp which puts you on eastbound US-36. Take US-36 east 17.2 miles to CR 241. Turn right (south) onto CR 241 and continue for 6.2 miles. The DSS entrance is on the left between two tall posts.

*Note: Travel distance from Denver using the North route is actually 3.9 miles shorter than the traditional route. The first 5 miles of CR 241 going south from US-36 is narrow and somewhat rough. Be careful.*

### Warming Hut Rules

- The last people on the site must turn off the lights and the heat.
- A microwave will be provided for warming food. Please clean up after yourself.
- No pots and pans, appliances, or other supplies are to be left in the shed.
- No personal supplies are to be left in the shed overnight.
- Do not donate furniture or other things unless you clear it with the D.S.S. committee first.
- No food left overnight in the shed.
- No sleeping overnight in the shed.
- Quick naps are permitted if you feel you might fall asleep on the way home. We would prefer you get your nap rather than falling asleep on the road. However, we don't want it to become a tent for camping.
- Clean up after yourself before you leave the site.
- Please clean up all food that drops or is spilled, otherwise it will attract mice and insects.

## BinoQuest II The Superior Difference by Patrick Ryan

So there I was, having earned enough at the telescope shop to get a really nice waterproof roof prism binocular; a Leica, Zeiss, or Swarovski. It was coming up on twilight outside, and I took several binoculars out to test them. On a whim, I also tested the Nikon 10x42 Superior E, a porro prism binocular. It blew all the rest away with its brightness, clarity, contrast, depth of field, and eye relief. It lived up fully to the rave reviews that it had received in the online reviews that I had read. I couldn't say no to the view that it was giving me. In addition, its ergonomics were so good that I had no problem holding it steady to utilize its 10 power, which is something that many can't do with high power binoculars. So I bought it.

Before moving to Washington state, I had already bought the Nikon Superior E 8x32, one of the best general purpose binoculars commercially available, and rated "best overall," along with the Leica 8x32, by Better View Desired. I had wanted a high-end roof prism, one that was sized for general purpose use. I didn't have the bucks just yet for one of those European jobs, but I had read the reviews of the Superior E line. The Nikon 8x32 SE, according to amateurs and professionals, could give you all the optical performance of the expensive roofs, with a much lower price tag. Many birders consider this Nikon product to be one of the flagship birding instruments in existence.

I figured that I wasn't going to be spending a lot of time in the steamy rainforests, so maybe full waterproofing wasn't necessary. I bought the Nikon 8x32, and I've even taken it out in cold rain, with no adverse effects. This little glass had never failed to satisfy me.

However, this time in Washington I wanted something with either more magnification, or something with a bigger

exit pupil, preferably with full waterproofing. The Superior Es are very well made and well sealed, but they are not rated waterproof or fogproof.

Yes, in spite of what I'd learned and experienced, I had still somewhat bought into the hype and mystique of waterproofing. Optics, however, and the sheer joy of a clear view, won out. I can honestly say that the Nikon Superior E line has some of the finest optics made, beating out those European brands in many optical tests. Plus, the Nikons cost much less than those other guys.

Unfortunately, I had to get rid of some of my optics when I moved back to Colorado, for financial reasons. I chose to keep the 8x32. It was a little lighter, a little easier to hold steady, and had a little better depth of field than the 10x42, even though the 10x beats its little brother with its view. But I had to make a choice.

But what about astronomy? An 8x32 for binocular astronomy? Who uses those? It's always a 7x50 or 10x50 or something larger, right? A 4-mm. exit pupil is fine for dawn through dusk activity, but for astronomy...?

Actually, that 8x32 does very well, thank you. Yes, it has an exit pupil of only 4-mm. But let me tell you something, excellent



Author's Zeiss Design Selection 8x20 binoculars. Image: © Patrick Ryan 2001

# o b s e r v e r s d e c k

sharpness, clarity, and contrast can make up for a lack of exit pupil and magnification. If there are three things that the Nikon Superior Es have, it's sharpness, clarity, and great contrast. I should know, I've tried that little glass out at night. It beats others that I've tried with no problem, plus it's only 21 ounces, and a lot easier to hold steady. Of course, it helps that the optics give a high, neutral color transmission. An eyepiece design that's a little more modern and optimized than what Galileo used also helps. Actually, the eyepiece helps a lot! Other binocular manufacturers could learn a lot from the Nikon Superior Es. The views through their binoculars might not be so muddy and lacking in depth of field if they worked on their eyepiece designs a bit.

So now I know. I can carry around that little binocular for birding and nature observation during the day, and continue right on into the night when I stand with my fellow DASers under the stars.

So if you want a binocular with unbeatable optics that will bridge both daytime observation and astronomy, and you don't want to shell out for a Leica-sized price tag, check out the Nikon Superior E line. In addition to the 8x and 10x models, there's also a 12x50. Experienced reviewers have told me that its optics are on a par with the other Superior Es. The Superior E line has ergonomics that make even the 12x hand-holdable. Even so, you may want to fit it to a tripod.

#### A LITTLE SOMETHING EXTRA

Compacts! You get a good compact binocular, and you've got a friend for life! Well, maybe not . . .

And don't use 'em for astronomy, okay? I *know* that you don't use 'em for nighttime or astronomy! But you *can* use them for everything else! Many are fully weatherproof. They're maybe 6–9 ounces, they can hang around your neck all day, you can fold them up and stuff them in a pocket, you don't have to worry about the rain . . . What could be better?

That's the pair I have over to the left; the Zeiss Design Selection 8x20. Zeiss, Leica, and Swarovski all make 8x20 and 10x25 compact roof prisms. If you don't



The author feels that the Nikon Superior E 8x32 is one of the best general purpose pair of binoculars commercially available. Image: © Patrick Ryan 2001

want to spend the mega-bucks for one of those guys' full-sized binos, but you want the best available, then get one of their compacts. The resolution and detail that these compacts squeeze out of their small objectives is just amazing. Plus, they are so light, that you don't mind having them around your neck all day. I've had my

pair for almost a year, and I take it with me everywhere. Why be without a convenient and excellent binocular when you're traveling, hiking, or going places?

*Patrick Ryan, a DAS member since 1995, is an amateur astronomer and avid birdwatcher. For further binocular advice, he can be reached at: pluto6@qwest.net.*

## Dark Sky Site Guidelines

*The Dark Sky Site (DSS) is for the use of DAS members and their guests. If you are neither, please contact an officer of the DAS for a "guest pass," and read the DSS Guest Policy (below). Please remember that any light disrupts your eye's dark adaptation and can ruin astrophotography. Most members (astrophotographers may be the exception) are happy to share views from their telescopes, however, please introduce yourself and ask permission upon approaching a telescope owner. Please follow these simple guidelines to maintain a positive experience for everyone:*

- ★ Try to arrive before dark. If you must arrive after dark, please turn off headlights when turning into the site, and try to arrive from the north.
  - ★ Don't park on the graded graveled roads.
  - ★ Turn off or disable all dome and trunk lights in your car (or cover with layered red tape or duct tape)
  - ★ Use only dull RED FLASHLIGHTS.
  - ★ NO OPEN FIRES. NEVER.
  - ★ If you're the last person to leave, close the gate.
  - ★ If you leave before everyone else, ask for assistance in getting out of the site without headlights.
- Other suggestions:**
- ★ Wear warm clothing.
  - ★ Bring your own toilet paper in case that in the porta-pottie has run out.

#### DARK SKY SITE GUEST POLICY

*The DAS Dark Sky Site, while for the exclusive use of the membership for serious observing, will allow guests on a limited basis. Groups or classes wishing to use the DSS may do so only with prior arrangement through the DAS president or vice president.*





While rousting about “down under,” Bill Ormsby photographed the “Coalsack Nebula” region of the southern skies. Can you find Alpha and Beta Centaurus, and Omega Centauri?  
Image: © Bill Ormsby, 2001

## It's Party Time! (and other various updates)

**It's time once again to get out your favorite recipes** (or stop by the grocery store) and join your fellow DAS members for an afternoon and evening of serious feeding and observing! The DAS Picnic/Open House is slated for July 28—the club provides burgers, buns, condiments, pop, plates, and “silverware.” We're hoping for great weather and clear skies. Meet at Chamberlin Observatory at 4:00 P.M. for dinner, and stick around for the Open House afterwards. We can share the skies and our equipment with the public. If you have a barbecue grill you're willing to share, please contact Patti Kurtz at (303) 948-5825 or e-mail: [pkurtz@starfirecreations.com](mailto:pkurtz@starfirecreations.com).

### Regional Newsletter

Ginny Kramer, our MARS regional representative to the Astronomical League will create a quarterly newsletter with information and updates on our region. Its

purpose is to provide information to the astronomical community on all regional activities: To keep everyone informed about upcoming stargazes and meetings. It will also contain information about each area club and its activities. She's interested in your photos, articles, etc. for publication. The newsletter will be posted to the MARS region website ([www.mars-al.org/](http://www.mars-al.org/)), and mailed to certain officers within the DAS. Please e-mail her at [Ginnyorion@aol.com](mailto:Ginnyorion@aol.com), mail her at 3400 S. Lowell Blvd., Apt. 8-306; Denver, CO 80236 with your contributions, or call her at (303) 922-1920.

### Engineer Needed

The DAS needs the talents of a State Certified Electrical Engineer (someone who is knowledgeable about state building codes), for help at the Dark Sky Site. Anyone possessing such talent, please contact Larry Brooks by e-mail ([Lbrooks100@aol.com](mailto:Lbrooks100@aol.com)) or phone (303) 986-5255.

### It's Not Too Late!

The Astronomical League's 2001 Convention  
in Frederick, Maryland  
Wednesday, July 25, 2001–Saturday, July 28, 2001  
For more information, call (610) 926-6638 or visit  
<http://alcon2001.homestead.com/alcon2001.html>

## MARS Regional Convention

In what is likely the last regional get-together of the year, the Western Colorado Astronomy Club (WCAC), along with the MARS region of the Astronomical League, will host the Grand Mesa Star Party on September 14th and 15th. WCAC is the host for the Friday and Saturday night star party while MARS will host a Saturday afternoon session of amateur, professional, and poster papers. The star party will take place atop Grand Mesa which is some 40 miles east of Grand Junction, Colorado. The MARS paper session will be held at Mesa State College in Grand Junction. Since we are just beginning to put together the paper session there are openings for any reader who would like to make a presentation.

Information about the star party can be found at [www.wic.net/wcac/](http://www.wic.net/wcac/) or [www.wic.net/WCACstarparty.htm](http://www.wic.net/WCACstarparty.htm). The two officials of the star party are Mr. Steve Renner ([mdonn282532@aol.com](mailto:mdonn282532@aol.com)) and Mr. Dan Rosen ([westskydan@aol.com](mailto:westskydan@aol.com)).

To inquire about presenting a paper at the Saturday, Mesa College meeting, contact Jerry Sherlin, MARS Regional Chairman, at [sherlinj@aol.com](mailto:sherlinj@aol.com). Grand Mesa is an excellent observing site and we hope you will make plans to attend the Grand Mesa Star Party.—  
*Jerry M. Sherlin, MARS Regional Chairman.*

### Welcome New Members!

The following folks joined the Denver Astronomical Society during May. Welcome new members!

- Chip Verrill
- Dr. William Seybold
- Nickolas Cameron
- Stephen Michiche
- Paul Fields



NGC 4565 in Coma Berenices is part of the Virgo Cluster of Galaxies. Image: © John Polhamus, 2001

# updates

## July Speaker Could Leave an Impact

*“The threat of impact on Earth of an asteroid or comet, while of very low probability, has the potential to create public panic and—should an impact happen—be sufficiently destructive (perhaps on a global scale) that an integrated approach to the science, technology, and public policy aspects of the impact hazard is warranted.”* (Clark R. Chapman, et.al, Office of Space Studies, Southwest Research Institute)

Dr. Clark R. Chapman leaves an impact wherever he goes. At the very least, he'll have one thinking about those pesky space-rocks orbiting our sun—space rocks that have in the past, and will in the future, collide with our planet and create havoc of varying degrees. The DAS is indeed fortunate to welcome Dr. Chapman as its guest speaker at Olin Hall on July 27. Among Dr. Chapman's many credits and qualifications (far too numerous to name here), are his memberships within the Imaging Team of the Galileo mission to Jupiter, and the MSI/NIS (imaging/spectrometer) Team of the Near Earth Asteroid Rendezvous's (NEAR) extremely successful mission to the asteroid Eros. Asteroid 2409 Chapman bears his name.

Dr. Chapman received his undergraduate degree in Astronomy from Harvard, a Master's Degree in Meteorology from M.I.T., and a Ph.D. in Planetary Science from M.I.T. He's been published innumerable times and has become prominent in the subject of the hazard of comets and asteroids in striking our own planet. To read some of his papers and see his work, visit his webpage at <http://www.boulder.swri.edu/clark/clark.html>.—Ed.



Summertime brings out the showcase objects we couldn't see during the previous cold months. About 7,000 light-years from earth flies the Eagle Nebula (M16) in Serpens Cauda.

Image: © Tom Shaul, 2001



**“Boy, look at that Larry Brooks GO!! Guess all those Arthur Murray dance classes really paid off!”** From left to right: Pat Ryan, Theron Hampton, and Jerry Sherlin at last year's DAS Picnic/Open House. Photographer: Erin Wray

## “Light Litter” Campaign Successful

### NOTES FROM THE URBAN OBSERVATORY:

Colorado Governor Bill Owens has signed House Bill 01-1160 “Outdoor Lighting Standards” which was actively promoted by Dr. Stencel and many members of the Colorado astronomy community. This bill represents a beginning, educating leaders about the relationship of energy efficiency and smarter lighting, and establishing the principles of light pollution, trespass and glare in State Code. However, it is a small step, limited to new state-funded facilities, with exemptions. Much more is needed to educate the private sector and reverse the problem of “litter light.” If you want to help, contact the Colorado Section of IDA—[coloida@hotmail.com](mailto:coloida@hotmail.com) or visit <http://smartlights.tripod.com>.

### MENZEL CENTENNIAL SYMPOSIUM AT HARVARD, May 11, 2001:

About 100 astronomers and relatives of Donald H. Menzel converged on Harvard College Observatory to celebrate the numerous accomplishments of DHM. Born in Colorado in 1901, raised in Leadville, graduated East High (Denver)

1917, University of Denver 1920. He then was admitted at Princeton for Ph.D. studies under the famous H.N.Russell, and graduate 1924. He soon was an observer at Lick Obs. until joining the Harvard faculty in 1932, where he rose to Director in 1952 until 1965.

—Dr. Robert Stencel, DU Astronomy, email: [rstencel@du.edu](mailto:rstencel@du.edu), URL: [www.du.edu/~rstencel](http://www.du.edu/~rstencel).

**S & S OPTIKA**  
Colorado's Premier  
Astronomical Supply Store  
5174 So. Broadway;  
Englewood, CO 80110  
(303) 789-1089

Hours: Tuesdays, Wednesdays,  
and Fridays: 10 A.M. - 6 P.M.  
Thursdays: 10 A.M. - 8 P.M.,  
Saturday: 10 A.M. - 4 P.M.  
Closed Sundays and Mondays  
[www.sandsoptika.com](http://www.sandsoptika.com)

o d d s ' n e n d s

## About the Denver Astronomical Society

The DAS is a group of amateur and professional astronomers that share a mutual interest in the heavens. The DAS operates the University of Denver's Chamberlin Observatory, along with its prized 1894 Alvan Clark 20-inch refracting telescope. Our members have been involved with the first public planetarium at the Denver Museum of Science and Nature and the Smithsonian Astrophysics Observatory's "Moon Watch" program. The DAS successfully petitioned to have the Chamberlin Observatory listed on the National Register of Historic Places.

Our Credo is to provide members a forum for increasing and sharing their knowledge, to promote and educate the public about astronomy, and to preserve the historic telescope and observatory in cooperation with the University of Denver. To these ends we have established three tax deductible funds: the Van Nattan Scholarship Fund, the Chamberlin Restoration Fund, and the DAS Dark Sky Site Fund. This last fund was established in order to construct and maintain observing facilities near Deer Trail in eastern Colorado.

Please call our Info Line at (303) 871-5172 and drop by the General Membership meetings. Become a member and enjoy speakers, facilities, events, and our monthly newsletter, *The Denver Observer*.

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: \_\_\_\_\_  
 (Associates 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: \$30	Associate: \$10 (Age 22 and younger)	..... \$ _____
Astronomy Magazine/\$29		..... \$ _____
Sky & Telescope Magazine/\$29.95		..... \$ _____
Dark Sky Site Fund Donation	.....	\$ _____
Van Nattan Scholarship Fund	.....	\$ _____
Chamberlin Restoration Fund	.....	\$ _____
Total Amount Paid	.....	\$ _____

Complete this form, or a copy, and mail it with your check or money order payable to The Denver Astronomical Society:  
 DAS Treasurer, Chuck Carlson; 1521 So. Vine St.; Denver, CO 80210



## Denver Astronomical Society

c/o Chamberlin Observatory  
 2930 East Warren Avenue  
 Denver, Colorado 80208

### JULY'S SPEAKER:

Dr. Clark R. Chapman,  
 Southwest Research  
 Institute, "Near-Earth  
 Asteroids and Impact  
 Hazards." See Page 7.

j o i n u s