

The Denver

# OBSERVER

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



## **Totality Success!!**

Numerous folks from Denver travelled across the world to stand in the path of totality for the March 29, 2006 total solar eclipse in Sollum, Egypt. For 3:56 minutes, we gawked at the "big black hole in the sky" when the moon completely covered the sun. The people of Sollum created an enormous "tent city" where thousands of people from all walks of life converged peacefully to share the most breathtaking and spectacular event that Mother Nature provides.

Image copyright 2006 Zachary Kurtz

# TOTAL RECALL

## MAY SKIES

This May we have the rare opportunity to see a comet (73P/Schwassmann Wachmann 3) come apart in the solar system. This is happening right now. The parts are dim and best viewed from darker skies. Using the 18-inch Cassegrain at SBO on April 15, with a fullish moon in the sky parts B and C appeared as dim globular

*Continued on page 5*

### MAY PREDOMINANT MESSIER OBJECTS

#	Description	Magnitude
M51	Spiral Galaxy	8.4
M106	Spiral Galaxy	8.4
M63	Spiral Galaxy	8.6
M94	Spiral Galaxy	8.2
M3	Globular Cluster	6.2
Coma Berenices, an often overlooked constellation, contains:		
M53	Globular Cluster	7.6
M64	Spiral Galaxy	8.5
M85	Elliptical Galaxy	9.1
M91	Spiral Galaxy	10.2
M88	Spiral Galaxy	9.6
M100	Spiral Galaxy	9.3
M99	Spiral Galaxy	9.9

- 1 ..... May Day
- 4 ..... First quarter moon
- 13 ..... Full moon
- 14 ..... Mother's Day
- 20 ..... Last quarter moon
- 26 ..... New moon
- 29 ..... Memorial Day

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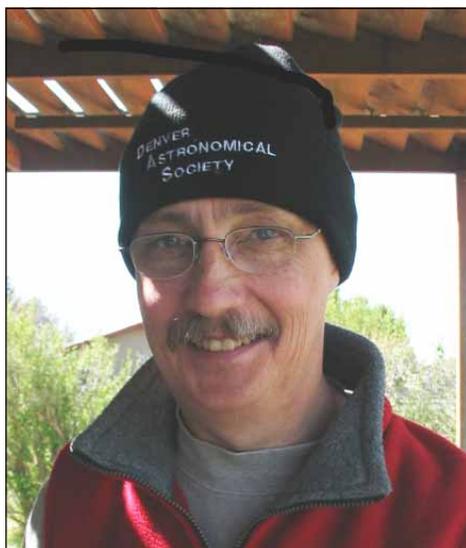
# President's Corner

The last month has been interesting—DU has started work on the Van Nattan Observatory, with some much needed attention to the wood work and the flashing. A recent sewer backup at Chamberlin led to the discovery of a large sewage cistern about 20 paces from the east window of the library at Chamberlin. They lifted a concrete lid in the yard and discovered a buried part of Chamberlin, complete with historic brick-work.

The financial health of the DAS is very good. Even after making the \$10,000 donation to DU in support of Chamberlin Observatory, our financial status is healthy and we are very capable of supporting our outreach programs. We are in a position to award grants submitted by DU towards projects centered around Chamberlin. The Van Nattan-Hansen Scholarship fund is being moved into a position where we can fund two \$1,000 scholarships from accrued interest, and still have a comfortable amount left over to grow the endowment.

The long range radar shows Colorado Astronomy Day on the 28<sup>th</sup> of October. We called the Denver Museum of Nature & Science to make sure we have our calendars coordinated. We will be meeting with them in early July to plan the fine tactical details.

It is time to think about the DAS picnic! It



Wayne Green, president of the Denver Astronomical Society, shows off his dapper DAS knit hat (for sale now!)

is on July 1st this year, corresponding to our Jupiter event. So we are putting out a call to arms . . . as well as grills!

In the short term, we have our Saturn Madness Open House on May 6th and the University Hills Tour of Homes on May 7<sup>th</sup>. Several groups of Public Night guests received spectacular glimpses of the ringed planet with the Clark 20-inch refractor.

The summer months are kicking off, so we will have a number of opportunities to get out and observe without fear of frost bite. Now, where did I put that mosquito repellent...

## DAS Schedule

### MAY

- 6 *Open House at Chamberlin Observatory (Begins at 7:30 P.M.)*
- 12 *General Meeting (7:30 P.M.)*
- 14 *Mother's Day*
- 19 *E-Board meeting, 8 P.M.*
- 26-28 *RTMC*
- 27-28 *EGK Dark Site Weekend*

### JUNE

- 3 *Open House at Chamberlin Observatory (Begins at 7:30 P.M.)*
- 9 *General Meeting (7:30 P.M.)*
- 16 *E-Board meeting, 8 P.M.*
- 22-25 *Rocky Mountain Star Stare*
- 24-25 *EGK Dark Site Weekend*

*Public nights are held every Tuesday and Thursday evenings beginning at the following times: October 1 - March 31 at 7:00 P.M.  
April 1 - September 30 at 8:30 P.M. at Chamberlin Observatory  
Costs to non-members are: \$3.00 adults, \$2.00 children.  
Please call (303) 871-5172 for reservations.*

## DAS Officers

### President:

Wayne Green (303) 530-1023  
Email: [wgreen@infosavvy.org](mailto:wgreen@infosavvy.org)

### Vice President:

Darrell Dodge (303) 932-1309  
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### ALCor:

Jerry Sherlin (303) 680-6894  
Email: [sherlinj@msn.com](mailto:sherlinj@msn.com)

### IDA Representative:

Dr. Robert Stencel

## Executive Board Members

Jack Eastman	Bill Ormsby
Joe Gafford	Ron Pearson
Frank Mancini	David Shouldice
Ron Mickle	Dan Wray

Steve Solon, Past President  
President Emeritus, Larry Brooks

### DAS Information Line:

(303) 871-5172

### DAS Correspondence:

Denver Astronomical Society  
Chamberlin Observatory C/O Steve Solon  
2930 East Warren Avenue  
Denver, Colorado 80210

### Van Nattan Scholarship Fund

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Patti Kurtz  
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Denver Observer editor, Patti Kurtz  
StarFire Creations Unlimited  
(720) 217-5707

**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.**

the das . org

## Public Outreach

Public nights this past month experienced the usual events associated with this time of year. With Spring breaks and CSAP testing being completed, the students can now turn their attention to astronomy. As you may know, astronomy is not covered on the CSAP and is deferred until after the CSAP test. The test occurs in the late March time frame, when we are shifting to our summer hours. The summer start time of 8:30 PM is pretty late for a school night so the number of guests at public night events drop. The weather also gets dicey. In April, we experienced two nights with double and triple the number of guests! The Dome Motor chose one of the busy nights to act up!

The public night teams rose to the occasion, and people went away extremely happy. On one busy evening the ATM group jumped in and took the club's "dobs" out onto the south lawn. This gave people a chance to see more objects and to experience amateur and professional level use of telescopes and observing. Muchas gracias to the ATM folks with their much needed help!

## DAS May Meeting: John Spencer on The Geysers of Enceladus

The speaker at the May general meeting will be Dr. John Spencer, who will discuss the recent discovery of water-ice geysers on Saturn's moon Enceladus and associated information coming from the Cassini mission.

John Spencer is a Staff Scientist at Southwest Research Institute's Department of Space Studies in Boulder, Colorado. A native of England, he earned his PhD in Planetary Sciences from the University of Arizona in 1987. He spent four years at the University of Hawaii before joining the staff of Lowell Observatory in Flagstaff, Arizona, in 1991. He worked there until he joined Southwest Research Institute in January 2004.

He specializes in the four large "Galilean" satellites of Jupiter, which he studies using theoretical models, Earth-based telescopes, and the Hubble Space Telescope. He was responsible

We have been asked by DU not to use Chamberlin Observatory or DU's name directly in our fund raising efforts. We have to honor this request. We have crossed paths with DU in our increased efforts to raise funds for Public Outreach. The DAS has always supported the health and well being of Chamberlin Observatory and its continuous and important role with astronomy and space science outreach in the community. To this end, as we continue to raise money for outreach we will make a generous portion available to support our home at Chamberlin. We can do this through the grant process. DU can write grant proposals requesting DAS help to fund improvements at Chamberlin that amplify the outcome of learning that takes place at Chamberlin — both for DU students and the public.

Science competes with the glamour as reflected in the media — lavish attention is poured on sports figures and Hollywood celebrities. Seeing science in action in a building with spartan interior conditions does not motivate youngsters to pursue careers in astronomy, engineering or technology in general. The DAS Restoration and Maintenance Committee has a long list of improvements that we know can make a difference, and we are now in a stronger position to affect those changes.

You will notice a change in the membership form. The donation line item for Chamberlin Restoration Fund has been replaced with "Public Outreach." This money will be available under the grant process to assist with Chamberlin as requested by DU as well as to meet needs of our outreach efforts.

This change benefits the Restoration and Maintenance Committee. They will gain more control over how these funds may be used to meet DAS requirements in these areas. We hope to make basic improvements in these areas making our students and visitors more comfortable thus leading to a better learning outcome.

## Cups and Hats

Dan Wray has done a stellar job once again, and we are well stocked with stocking hats and coffee cups. Wayne is wearing his stylin' hat in this month's President's Corner photo. These are available for sale at Open House events, after the General Meeting, and for members at all our events.

## Web Site News

We will be revamping and updating the entire website over the next few months. Please email ideas, contributions and recommendations to [VP@TheDAS.org](mailto:VP@TheDAS.org) or [President@TheDAS.org](mailto:President@TheDAS.org). If you have skills in web development and want to help us make the best amateur astronomy website possible contact us and get involved. —

*Wayne Green*

## New Guidebook to DU's Historic Chamberlin Observatory

We are pleased to announce the publication of *Denver's Great Telescope*—a richly illustrated 100-page guide to the great refractor and its environs, by C. & R. Stencel. Copies are available at \$15 postpaid. Mail a request and check payable to the University of Denver, to: Prof. Stencel, Chamberlin Observatory, University of Denver, Denver CO 80208 USA. Please include your return address info. Proceeds support observatory programs. While supplies last.

Saturn's moon Enceladus; and co-discovery of oxygen on Jupiter's moon Ganymede. His theoretical work has improved our understanding of nitrogen frost on Pluto and Triton, water frost on Jupiter's moons, and heat radiation from asteroids.



updates

# Jim's Dome-at-Home

Article and Photos by Jim Firebaugh

I wanted to keep out of the wind, cold and neighbors yard lights while viewing this winter so I made a temporary observatory out of PVC and a tarp. That worked very well but it was only 7 feet across — it didn't give me much room to move around inside. My house faces southwest, so the elliptic crosses the backyard perfectly.

I started looking online for manufactured dome observatories. They were very nice but expensive. Next, I looked for observatories that others had built and found a geodesic dome that I really liked. It was made out of 3" bead board and needed to be cut with a hot wire made from wire and a battery. After that I'd have to cover it with cement after the bead board was glued together. This seemed too complicated so I decided to use seven sheets of 4'x8' paneling. The plans had the dimensions of the triangles, and there were only two types. One size was for the pentagons



Top Image: Jim's dome pictured with construction beginning on the slit. Below, the braces he used to hold the dome together.

and another for the hexagons. I figured I could handle that.

I used paneling connectors and pop rivets to hold the triangles in place. It took almost a month to cut out the triangles and pop them together — I'm retired so it kept me out of trouble. My friend Rachel was a big help doing this as it's more than a one person task.

The dome rotates on six rubber wheels that are installed on the base and I used six clothesline rollers mounted horizontally on the base to keep it centered. Maybe this summer I can figure out how to motorize everything. The first time I closed the slit while I was inside the dome, I realized I needed a handle in there so I could open it again to get out.

I had planned to use fiberglass to cover the dome to strengthen it but that was much too expensive so I used



## May Skies

*Continued from page 1*

clusters. The comet is passing along Bootes, into Vega, Cygnus, Pegasus, under Cygnus and part of Pisces. Jupiter is beginning to make an appearance in the later evening sky as a very bright object: People are certainly noticing it. Saturn continues to put on quite a show. Even with Saturn past the meridian at midnight (closest to Earth) the faint moons continue to impress to Chamberlin visitors when the seeing is good. —  
*Prepared by Public Night Team 5.*

*The Edmund G. Kline  
Dark Site: Observing and  
imaging under some of  
the region's finest skies.  
For site information,  
please visit the DAS  
website.*



Both images: Jim's finished dome outside in his backyard is ready for observing!

sunscreen and contact cement instead. Rachel and I cut out the sunscreen into triangles two inches larger than the paneling triangles so there would be an overlap. That was messy enough but it did a great job. I then painted everything with mobile home rubber roofing paint to water proof it.

One of the neighborhood kids often stopped by on his way home from grade school, and told me it wouldn't hold up under the weight of the snow we get! I didn't know they taught structural engineering in grade school! But, just in case he was right I suspended myself from the top of the slit and it didn't sag a bit. I'm a large person so the dome can withstand any snow load nature can send. I'm now ready for some serious observing!



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

# Walk Like an Egyptian —

After a rather hazy beginning to the total solar elcipse in Sollum, Egypt on March 29, 2006. The sun wasn't the only celebrity present for

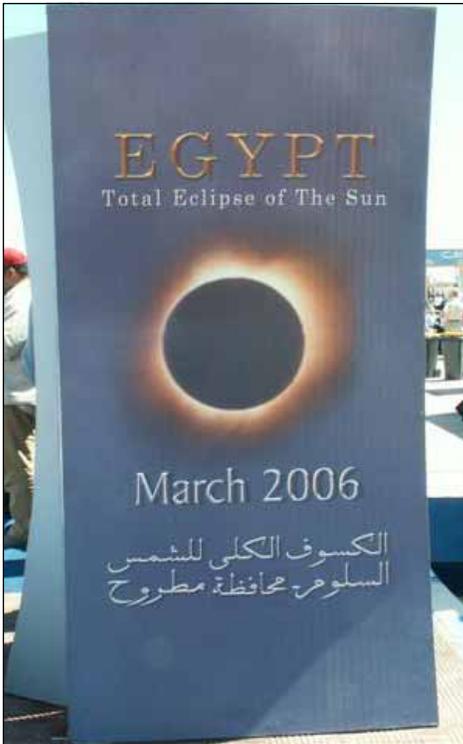


Photo copyright 2006 by Pauline Ide



Photo copyright 2006 by Patti Kurtz

Photos clockwise from top left: Sollum welcomes all to the eclipse; thousands of years ago, the Avenue of the Sphinxes connected the complexes of Luxor Temple and Karnak in Luxor and stretched for three kilometers; totality captured in an instant; and a kind of "where's Waldo" shot of the site where DAS members Pauline Ide, Laurie Scholl and Sandy Shaw staked out their eclipse observing spots.

Photo copyright 2006 by Pauline Ide



Photo copyright 2006 by Pauline Ide



# A Monumental Eclipse

the show: Egypt's president Mubarak arrived in the nick of time. A success all around, the day was full of memories that will be cherished for a lifetime.



Photo copyright 2006 by Patti Kurtz

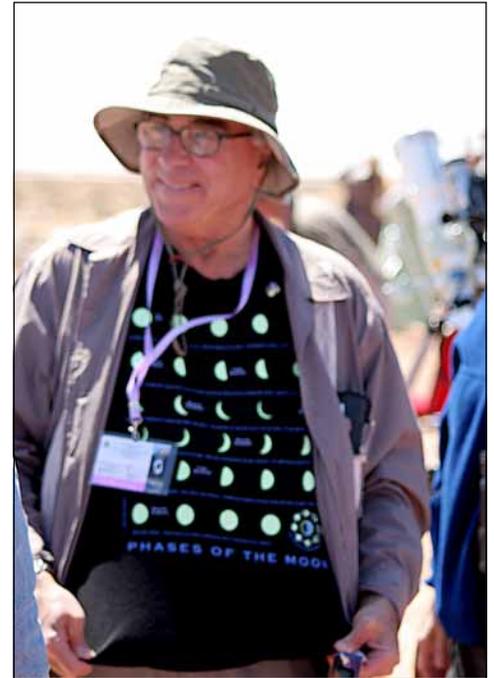


Photo copyright 2006 by Patti Kurtz



Photo copyright 2006 by Patti Kurtz

Photos clockwise from top left: the traditional photo of mini-crescents projected from a straw hat; Colgate archaeoastronomy professor Anthony Aveni glows in the shadow; stellar kids Zack and Nick Kurtz greet their first total solar eclipse; and Ramses II at Luxor.



Photo copyright 2006 by Patti Kurtz

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

## About the Denver Astronomical Society

Membership in The Denver Astronomical Society is open to anyone wishing to join. The DAS provides trained volunteers who operate 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 participates in **NASA's Project Astro** program.

The DAS' credo 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 (Students under age 23)

..... \$

Astronomy Magazine/\$34

Sky & Telescope Magazine/\$32.95

..... \$

Van Nattan Scholarship Fund ..... \$

Public Outreach Fund ..... \$

Total Amount Paid ..... \$

*Please make donations to the Dark Sky Site Fund payable to the DAS EGKDS Fund and mail to Steve Solon, 9774 W. Elmhurst Place, Littleton, CO 80128-5199. Please make other amounts payable to the Denver Astronomical Society and mail along with this completed form to Brad Gilman, DAS Treasurer, 7003 S. Cherry St., Centennial, CO 80122-1179.*



## Denver Astronomical Society

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

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