

OBSERVER

Newsletter of the Denver Astronomical Society
One Mile Nearer the Stars



Star of the Show

Bryan began imaging the transit at 12:12 p.m. and made one shot every 15 seconds until Mercury was clear of the limb. He then imaged every 10 minutes until the sun went behind the mountains. He used a Nikon D-100 camera on a C8 scope with focal reducer and a Baader Solar filter.

Image copyright 2006 Bryan Wilburn

CELESTIAL GREETINGS!!

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DECEMBER SKIES

December opens with a rare grouping of Mercury (-0.7 M_v), Mars (1.6 M_v) and Jupiter (-1.7 M_v). According to the *Astronomical Calendar*, during the morning hours from December 7 to 14, the trio will lie within a 5° circle in the southeast, and form

an even smaller group to fit within a circle 2° wide December 9 through 11. On December 10 about 40 minutes before sunrise, the trio will fit into an even tighter 1° circle, with Mercury 0.1° from Jupiter. The grouping (conjunction in as-

DECEMBER PREDOMINANT CELESTIAL OBJECTS

Description	RA	DEC	Description	RA	DEC
Ψ Draconis, double cluster	17h 41.9m	72° 10'	M42, Orion nebula	05h 35.4m	-5° 22'
M57, Ring nebula	18h 53.6m	33° 02'	48σ Orionis, multiple star	05h 38.7m	-2° 35'
M31, Andromeda galaxy	0h 42.7m	41° 16'	M35, cluster	06h 08.9m	24° 21'
M33, Triangulum galaxy	01h 33.9m	30° 39'	Castor, double star	07h 34.6m	31° 54'
ι Cassiopeiae, triple star	02h 29.0m	67° 24'	M81, galaxy	09h 55.6m	69° 04'

4	Full moon
12	Last quarter moon
20	New moon
21	Winter solstice (5:25 P.M. MST)
27	First quarter moon

tronomical terms) of these three planets is the closest of visible planets for the next 25 years. If you use binoculars for viewing, you'll probably spot a third object in the grouping on December; this is

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President's Corner

This month we had great success with the Transit of Mercury. Overall, DAS members reached around 1,000 people. The press gave us coverage on the Channel 2 News on Tuesday Morning and Channel 9 sent Nick Carter and a cameraman to Chamberlin for the event. Channel 7 also sent a cameraman. KNUS from Boulder sent a reporter, and did a pretty extensive interview with Dr. Stencel. The Rocky Mountain News had a reporter on hand. Overall we had a good turnout of members as well. I counted over 30 members involved in some manner with their scopes on the lawn. This was a great event, and we had a lot of fun.

Monday, the 30th of October, Brad Gilman and I joined with some folks from Boulder Astronomy and Space Society and the Longmont Astronomical Society for a staged star-party over at Gary Garzone's house in Longmont. DAS was asked to get some people together to demonstrate the "kit" that amateurs use for a BBC/Discovery Channel film crew for their program, "How Do They Do That." The episode is scheduled for January release in Europe and Spring release here in the States. That night,



they were more than impressed with the telescopes and got a pretty good idea of how we gather data to support various observing programs. Their eyes opened wide to see Gary's 30-inch DOB being put together!



Four of the observing team of the November 8, 2006 Mercury Transit at DU's historic Chamberlin Observatory (clockwise from left): Ron Mickle, Stuart Hutchings, Brad Gilman and Wayne Green.

Image 2006 Dr. Bob Stencel

The winter months are upon us, and that means cold weather. The Dark Site, with its new pads, is seeing more use every weekend. The warming hut and the vault toilet make the site a lot more comfortable than roughing it out in the weeds somewhere.

We have the Pot Luck, to be held in town this year, so I expect to see a lot more of you there. We are starting earlier this year in case the weather is as iffy as it has been in the past. Looking back, DAS has had a very good year, despite the summer weather!—Wayne Green

DAS Schedule

DECEMBER

- 2 Open House at Chamberlin Observatory (*Begins at 5:00 P.M.*)
- 8 E-Board meeting at Chamberlin Observatory (*Begins at 8 P.M.*)
- 9 DAS Holiday Potluck (*Begins at 4:30 P.M. at CUCC, See Page 3.*)
- 16 Hanukkah Begins
- 16-17 EGK Dark Site Weekend
- 25 Christmas Day
- 30 Open House at Chamberlin Observatory (*Begins at 5:00 P.M.*)

JANUARY

- 5 General Membership Meeting at D.U.'s Olin Hall (*Begins at 7:30 P.M.*)
- 12 E-Board meeting at Chamberlin Observatory (*Begins at 7:30 P.M.— Note: new time*)
- 20-21 EGK Dark Site Weekend
- 27 Open House at Chamberlin Observatory (*Begins at 5:00 P.M.*)

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.

Society Directory

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 Frank Mancini David Shouldice
 Ron Mickle Dan Wray

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Colorado Astronomy Day:

Darrell Dodge

Annual Picnic:

Keith Pool

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The Observer is available in color PDF format from the DAS website.

Website:

Darrell Dodge and Patti Kurtz

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 8 P.M. at Chamberlin Observatory. Please see the Schedule of Events for meeting dates. All members are welcome.

thedas.org

Holiday Potluck 2006

by Wayne Green and Darrell Dodge

Come one, come all . . . to the annual DAS Holiday Potluck, to be held this year on Saturday, December 9th from 5-9 pm at the Columbine Unitarian Universalist Church, 6724 South Webster Street, Littleton, Colorado.

Bring your best culinary potluck creations (salads, casseroles, light meat dishes, desserts, and breads) to our traditional end-of-year gathering. DAS will provide soft drinks, eating utensils, and ham and turkey meat servings. You'll experience the very best of company and witness the annual photo review of the year's highlights.

The DAS participation prize drawing will also be held at the potluck, covering the last four months of DAS outreach and volunteer activities during 2006.

The church is located several blocks east of Wadsworth Boulevard, on the south side of Coal Mine Road.

Driving Directions:

From Wadsworth Blvd: Turn east on Coal Mine, proceed down the hill to Webster Street (traffic light), turn right, then first left into CUUC.

From Santa Fe South: Turn west (left) on Mineral (becomes West Ken Caryl), north (right) on Pierce Street; west (left) on Coal Mine. Proceed down the hill to the first traffic light. Turn left onto Webster St. then first left into CUUC.

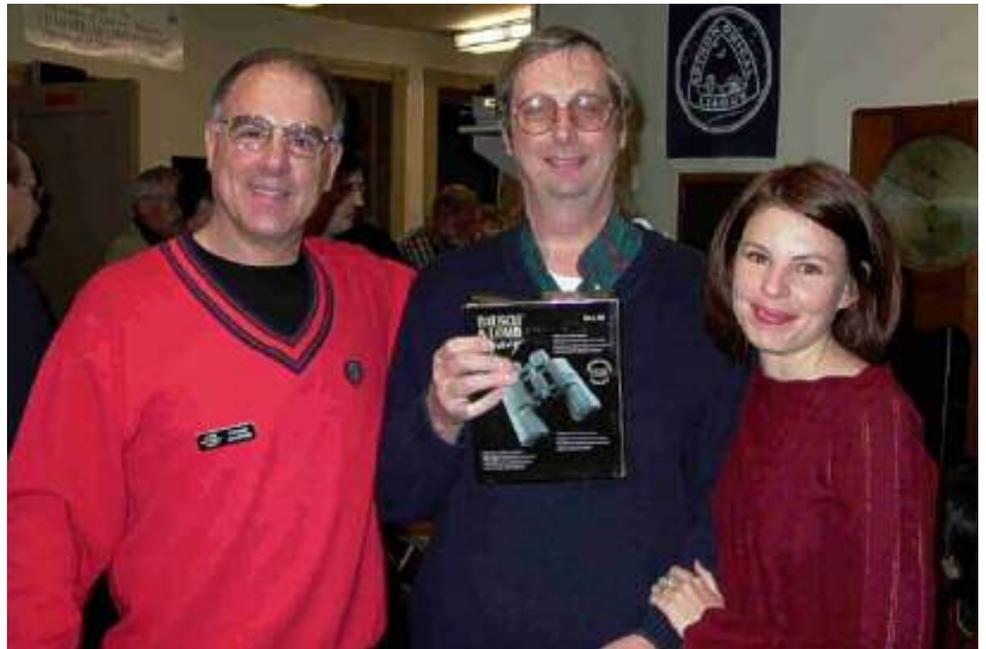
From Santa Fe North: Turn west (right) on Bowles, south (left) on Platte Canyon, west (right) on Coal Mine. Proceed to first traffic light past Pierce Street. Turn left onto Webster Street, then first left into CUUC.

From C470 South or East: Exit at Wadsworth Boulevard. Head north (right) (then see above).

From C470 North or West: Exit at Bowles Avenue. Head east, then turn south (right) on Wadsworth Boulevard (then see above).

Volunteers Needed

Volunteers are needed to help set-up before (starting at 3P.M.) and clean-up after the potluck. E-mail Darrell Dodge at dmdodge@aol.com if you can help out.



Rich Loper (middle) was presented the DAS participation prize by Frank Mancini and Carla Swartz at the 2003 Holiday Potluck. Will you win in 2006?

Image 2003 Darrell Dodge



updates

Transit, Transit Everywhere

by Dennis Cochran



Image copyright 2006 Joe Gafford

DAS members covered numerous sites for last month's Mercury transit. Above is a composite of 52 images taken about five minutes apart, stacked and aligned in Photoshop®. Joe Gafford used an Olympus E-volt 500 DSLR camera on a 10-inch f/4.5 telescope with a 2.75-inch mask and a Thousand Oaks glass broadband solar filter. The images were made at the EGK Dark Sky Site between 12:14 P.M. and 4:31 P.M. MST. The article covers a public viewing at Virginia Court Elementary School, and the remaining photos share Patti Kurtz's and Brad Gilman's experiences with DAS members and the public at the historic Chamberlin Observatory. Lower right: Ron Pearson at his telescope.

Late on the already-hot Mercury Transit morning Vic Burhans, Pauline and Cliff Ide and Dennis Cochran met at Virginia Court Elementary School in Aurora to set up scopes on the back lawn behind Nathan Schwalen's trailer classroom in preparation for showing kids the sun

with Mercury floating across its face.

"I don't see anything," several of them remarked to me, so I had to check the scope pointing, then coach them on what to look for: The large white thing (or red if I was at the PST) was the sun and they should look for a black spot near the right edge. This was a

storm on the sun, I said, and urged them to find the small dot nearer the middle, which was the planet Mercury, 4,000 miles wide, crossing the face of the sun. The fifth-graders understood this better than the second-graders since they had just built Nathan's solar system walk out in their schoolyard with red cones for planets. Vic, Pauline and Cliff each had their version of this spiel as they tended their telescopes. Nathan provided sandwiches and sodas which tremendously helped us get through the sun-burned day.

One little girl could not line up her eye to see down into the eyepiece, and nothing I did helped. Afterwards we all wondered how many kids actually saw Mercury. Naturally they all wanted to say they had seen the things that their peers had seen, and they all know how to please adults who ask them, "Did you see it?" so one never knows. But it did seem that a great many saw what was there, especially after being coached through it. We concluded, as the kids scampered home, that it had been worth it.



Photo copyright 2006 Patti Kurtz

transit of mercury



Photo copyright 2006 Brad Gilman



Photo copyright 2006 Brad Gilman

Clockwise from upper left: Rich Loper shares the transit view at the 20-inch Alvan Clark with 9 Newsman Nick Carter; A view of the outside crowd from the dome; Inside the dome visitors wait their turns at the scope; A view of the south lawn; Preparing for the transit; Ron Pearson and Dan Wray; and Dan Wray's setup on the south lawn.



Photo copyright 2006 Patti Kurtz



Photo copyright 2006 Brad Gilman



Photo copyright 2006 Patti Kurtz



Photo copyright 2006 Patti Kurtz



Photo copyright 2006 Patti Kurtz

transit of mercury

Colorado Astronomy Day Update

by Darrell Dodge
All photos by Ron Pearson

Clear Hallowe'en weather, Comet Swan, DAS volunteers and hundreds of visitors made Colorado Astronomy Day special in 2006!



Thanks to over 40 DAS volunteers and the help of Jennifer Moss-Logan and her staff at the Denver Museum of Nature & Science (DMNS), the 2006 version of Colorado Astronomy Day was a howling success on October 28th. A little green comet named after a robot also helped a bit, as SWAN gave us something new and exciting to fire people's imaginations. The day started with an amazing morning "sun dog" above the museum and kept getting better, except for a few afternoon gusts.

35 to 45 people were in attendance at each of the fine lectures at the DMNS: Dr. Roger Clark's talk on Cassini and water in the solar system, Dr. Robert Stencel's pre-

sentation on Infrared Astronomy presentation, and Dr. David Grinspoon's discussion of the debate about Pluto's reclassification. The Galaxy Stage format provided an opportunity for lots of questions and answers after each talk.

More than 200 people attended the two awesome 3-D astronomy

presentations by Bryan White of Nitescapes.(80 people at the first presentation and 125 at the second), largely thanks to Frank Mancini and other's efforts to direct people to the auditorium.

Denver Astronomical Society's solar telescopes attracted 300 viewers at DMNS, half of whom

were passers-by on their way to "Boo at the Zoo!" There were even some solar flares to see during the afternoon. Naomi Pequette brought members of the Active Teens of the Museum by to learn the ins-and-outs of solar observing equipment from John Anderson, Todd Hitch, Ted Cox, Tim



colorado astronomy day

Pimental, Wayne Kaaz, Ron Pearson, Rod Pinkney and others who brought scopes.

Almost 300 people showed up during the evening observing at Chamberlin Observatory to ogle Comet SWAN and other wonders through the 20-inch Alvan Clark and three dozen more DAS telescopes. Ron Hranek and Philip Good had video/CCD displays and Jim Holder held a star-hopping challenge that attracted a lot of interest out in the park. A little girl in a witch costume running up to the observatory shouted, "it looks just like a haunted house!"

Inside, Joe Gafford showed his SWAN photos and Dan Wray had a big display of meteorites in glass cases (despite losing his PST to capricious winds in the afternoon), and Dr. Stencil provided information on the IDA and

lighting to maintain dark skies. WB2-TV stopped by to capture some footage for their evening news show. Thanks go especially to the desk staff and the 20-inch operators (Brad, Rich, Stuart and others) who handled the long lines and took time to help a gentleman in a wheelchair get a view through the big telescope. In a stroll through the park to collect names for the participation prize drawing, I could hear the dozens of DAS volunteers sharing their knowledge and excitement with visitors in the dark.

What a day! — and only four months until the last Springtime National Astronomy Day with Saturn and Venus on April 21st!



November Skies

Continued from page 1

the star Beta Scorpii. Beta Scorpii, Mercury and Jupiter all fit into a circle only 27 arcminutes across. This is an incredible opportunity to view such a close association of celestial objects and a good opportunity for those who have never attempted astrophotography to mount the digital or film camera on a tripod and give it a try.

Also visible on December 10, the waxing gibbous Moon and the ringed planet Saturn will lie within 1° of each other.

December 4 marks the earliest end to evening twilight, while the 7th is the earliest sunset. The Winter solstice is the 21st and is also the shortest day

(9 hours and 20 minutes) of the year for Coloradans.

To get a great view of the planets, stars, and other celestial objects, visit the Denver Astronomical Society's next Open House at 5 p.m. on Saturday, December 2 at the University of Denver's Historic Chamberlin Observatory. For the public, there is a \$1 upkeep fee to look through the Clark 20-inch telescope. Members of the Denver Astronomical Society have free access to the Clark 20-inch at Chamberlin Observatory during Open House.—Ron Mickle, Denver Astronomical Society.

Sources: *Astronomical Calendar 2006*, *Sky & Telescope* and *Astronomy* magazines.



colorado astronomy day

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 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.



**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
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