



The Observer

Newsletter of the Denver Astronomical Society

“One Mile Nearer The Stars”



Friday, April 1, 2006

Newsletter News

Printing and mailing of the newsletter, the same material that you can download from the website, costs DAS on the order of \$400.00 per month in printing and postage.

We would like to request that you consider shifting to downloading the PDF of the newsletter from the website and free up funds for other action! Send an email to pdfPlease@thedas.org, with your name and address, so we can make the change in the mailing label program.

Get published! Mail your articles, reports, and images to

newsletter@thedas.org

Publication deadline is the 15th of each month.

We like to keep the information in the roster current, even if you receive the PDF version of the newsletter. If your contact info changes, please tell Stuart Hutchins at

stuart452@earthlink.net

Monthly Meetings

The April General Meeting will be April 21st at Olin Hall. The speakers will be Dr Robert Stencel and Aaron Reid talking about International Darksky Association news and the upcoming 22 April Earth Day event at Chamberlin Observatory.

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President’s Corner



As the recently elected President of DAS, it is indeed a privilege and an honor to be serving at this time. I can't

decide where DAS's highest priorities lay. Is it Public Outreach or is it championing Chamberlin Observatory and its Historic Alvan Clark 20" Telescope? We host around 118 outreach events annually

at Chamberlin that both promote astronomy and space science as well as feature the history, abilities, and present the strong commitment to community service that has always been a role of the Observatory.

We enjoy a strong working relationship with DU, through Dr. Robert Stencel and the Department of Physics and Astronomy. The community made 3000 reservations to attend Tuesday/Thursday events last year showing their strong support. They rewarded Chamberlin Observatory with a \$199,585 grant for much needed repairs and restoration.

We also have the Edmund G. Klein Dark Sky Site, a retreat where our members can get together and have some serious fun viewing and recording observations. We finished Phase I of the DSS building plan, and are entering into Phase II now. This summer's plans are to add more observing pads and a small building for storage to the site.

We cannot forget the Van-Nattan Hanson Scholarship Fund, where we have contributed over \$27,525 to the community since its creation in 1974. We received a significant donation to the fund from an original founder's estate this year showing strong continued support and interest in the scholarships.

The thing that sticks out in my mind the most is the dedication that our members show in promoting astronomy and space science. The

hours of standing in the cold introducing people to the splendors of heavens on the lawns of Chamberlin, at parks and schools in the area, with the Museum of Nature and Science, at Nature Centers, scout meetings, and all the other places where we are asked to perform the magic you perform so well.

I can't decide what DAS's highest priority is, but I have made up my mind that my highest priority is to serve our members to the best of my ability in furthering all goals of DAS.

--Wayne Green

Upcoming Events

- April 8 DAS Open House. New hours: 7:00PM. Cleanup at 5:00PM.
- Apr 14 Good Friday and Eboard Meeting at 6:00PM.
- Apr 21 DAS General Meeting. Dr Stencel, Aaron Reid, IDA.
- April Earth Day at Chamberlin 22 (Non DAS event)
- Apr 29 DSS Weekend
- May 6 DAS Open House, Saturn Madness.

Welcome New Members

We would like to welcome these new members to DAS!

Mark Newberry, Gary Goodale, Lee Gillman, John Blancett, Gene Pfeifer, Bryan Wilburn, Ralph Jung, Kurt Darrow, David Koerner, Marty Crandall-Grela, Jim Pequette, Nathan Campanella, Wanda Boortz, Will Burt, Howard Weatherhead, Robert Remick, Emily Wagner, John Moyles and Michael J. Solloway.

Welcome aboard.

Annual Banquet

Our hearty thanks to Dr. John Bally for a thrilling presentation of the formation of stars and planetary disks, the state of affairs with the emerging time line of the universe, and an overview of perils facing scientists in obtaining support for research in the face of reducing government support.

The images that Dr. Bally showed, especially those in the Orion Nebula, had us on the edge of our seats. My only criticism of the talk is that he should have reminded us to breath more frequently!

We also extend our thanks to the Grange at the Meadows in Castle Rock for allowing us the use of their excellent and comfortable facilities. The Grange is easily reached, as it is just off of I-25 on the northwestern corner of Castle Rock.

We owe Steve Solon a hearty "thank you" for a good Banquet and can only chastise him for his choice of weather.

Dark Sky Corner

Tempestuous April weather dampened activities at the Dark Sky Site once again, interfering with the Messier Marathon that was taking place. High clouds and winds hampered the efforts to see all the Messier Objects in one evening. Our new Vice President was still able to log 109 objects using GOTO scope techniques. While not legal, it showed that persistence pays off!

April Skies

Saturn is remarkably well suited for viewing this month. The meridian shows an absence of bright, easy-to-see objects. But you can try your hand at the galaxies in Leo and Ursa Major.

Springtime in the Rockies brings wet weather at a time when there are few bright objects in the evening sky. Messier objects of M40, M65, M66, M95, M96, M97, M105, M106, M108, M109 are prominent this month, and many of these objects offer a distinct challenge.

The BAA reports, "Comet 73P is now visible in small aperture telescopes or large binoculars. Many new fragments have been found, though all are very faint. Component B is in outburst and is now brighter than the main component, which could indicate a further fragmentation. The main body could reach 4th magnitude in May, with two other components visible in binoculars." These fragments are in the 9th magnitude range, and are hard targets to view in town.

April General Meeting

The April general meeting brings Dr. Robert Stencel and Aaron Reid to talk about issues surrounding the battle for the dark skies of the night. They recently attended the International Darkskies Association convention. This month's general meeting falls on the night before an Earth Day event at Chamberlin where IDA will be promoting public awareness of dark sky issues and means of mitigating light pollution at the personal level.

Public Night Teams

The apprentices are working their way through their training sessions and some are approaching their Scope Check Out finals with Dr. Stencel. We have placed emphasis on using the Clark telescope as it was originally designed, using the setting circles to find objects rather than the computer.

Thanks to Qwest Communications

for their donation of a laptop computer. We use the computer to for The Sky, from Software Bisque, and encoders on the Clark Telescope. This laptop has wireless connection to the Internet, allowing us to gain easy access to data about objects being observed.

Observer's Corner

As the Observer goes to bed, our usual editor is chasing an eclipse in Egypt. Many of our members are along on the trip. Clear skies and good luck with the eclipse; we look forward to a complete report at an upcoming general meeting.

Internet Options for DAS Members

DAS members may join the Yahoo! listserv and receive emails with information and observing details shared between members. There is also a place to post photos.

A DSL line is being donated to DAS that provides wireless Internet access within Chamberlin and can provide access to the south lawn. The thick stone walls and mesh on the windows make the signal strength low on the lawn except when the antenna is placed in the northwestern most window of the Dome Room.

In order to receive the signal, you must supply your wireless's MAC address and you need to add WEP keys to your machine. Some laptops are shipped with basic Internet WEP support but require a special utility program to use the WEP scheme at Chamberlin.

Amateur Telescope Making

The merry mirror makers are winding down their production of mirrors in the basement of

Chamberlin Observatory in anticipation of the start of restoration activities. Dust and telescope mirrors do not get along well!

Emphasis is shifting to making the rest of the telescopes, and we are all waiting to get a glimpse of objects through these handcrafted instruments.

For information about DAS ATM activities, contact Stuart Hutchins for details and meeting times.

stuart452@earthlink.net

DAS Science and Space News

May 6 of this year is National Astronomy Day. This corresponds with our May Open House event. We will be featuring Saturn Madness, with the spectacular views of Saturn that are available here. Get your posters and fact sheets ready.

The AL reports that "Astronomy Day occurs sometime between mid April and mid May on a Saturday near or before the 1st quarter Moon. Astronomy Week was created to give sponsoring organizations a longer period of time to host special events. Some local Astronomy Week celebrations have actually been longer than just one week."

Colorado usually experiences bad weather during this time, and to that end, we have been celebrating Colorado Astronomy Day in October for many years. This event is near the 1st quarter moon in October, which falls on 28th of October this year. We usually partner with the Denver Museum of Nature and Science for the event, with the DMNS Active Teens of the Museum (ATOM), and hold daytime festivities at DMNS and nighttime festivities at Chamberlin.

Miscellaneous News

DAS Hats, Coffee Mugs and Jackets

The coffee mugs and hats have arrived and may be obtained for a nominal fee at a meeting, public night, or open house event. They look great, thanks to Dan Wray for putting it all together.

Dan has agreed to pull together another order for jackets. Send him your size requirements.

Smoking at DAS Events

Smoking at DAS events has been brought to the attention of the EBoard. The EBoard asks that common courtesy prevail and that smokers be aware that many people are uncomfortable with the lingering smell of smoke on their clothes, hair, and optics.

E.G. KLINE DARK SITE NEWS & REQUEST

By Wayne Kaaz

The EKG Dark Site now has the Arapahoe County certificate of occupancy for the work that has been completed by those who have gratefully donated their time towards this effort. The Site Committee is now considering projects for the next phase of work. Several months ago I presented some information at the General Meeting regarding the Orange County Astronomers (OCA) proposed work for their Anza Dark Site.

When I returned to Colorado in 1994, the Anza site had the OCA Club and 3 member Observatories, 38 10' X 10' pads that were leased to club members, and Anza House (2-40' single wide mobile homes) which

served as a warming area and a dormitory/eating area. The Sirius Astronomer (the OCA News- letter) listed the new projects as follows: 78 pads for members to lease and 28 observatories. The OCA suggested that the observatories be standardized, in one or two sizes. The club also is proposing that the club build these observatories and sell them to the members for \$15,000 to \$25,000. Sounds like a lot of money to me, but maybe not considering that I sold my home (1,538 Sq. Ft.) for \$180,000 and 6 years later our neighbor sent us a notice that it had been sold for \$480,000. GASP!! The OCA owns their 20-acre site and it is paid for. The site is about 6 miles off the main highway in the high desert at 4,300 feet.

OK! What would our members like to see the DAS do to enhance our site? The pads have been discussed and the OCA 10' X 10" leased pads are a big question yet to be answered. The members leasing them build these pads, and they install their piers and other attachments and have electrical outlets. Joe Gafford has a pad arrangement that you can see the next time you are at the site. Other pad sizes the DSS Site Committee has considered are 6' X 6' and 3' X 3' without any pier capability. The Site Committee needs your input. A 24' X 8' shipping container is being investigated for use as a storage building for the DAS's 17 1/2" Dob. Telescope with 20' X 20' pad for the observing area.

Contact Wayne Kaaz or Steve Solon with your input.

E.G. Kline Dark Site Lease

DAS is currently 10 years into our 20-year lease at the Dark Sky Site. The agreement calls for anything that is added to the site be removed by DAS at our expense at the end of the lease. Pads are pretty easy to remove. The current building can be loaded and hauled to a new location. The market for used pit toilets is pretty small. Adding piers to the site makes the clean-up procedure harder, as the pier should be placed below grade at least to the frost level. Non-portable structures will most likely be destroyed in trying to move them. High winds and lack of adequate fire protection in the area requires that proper structural design techniques be observed.

DAS is considering extending the lease, since the owner appreciates amateur astronomy and the site is very far from civilization at this time, with no growth in the area in the foreseeable future. Extending the lease makes installing piers a more reasonable consideration.

Send your thoughts and comments to Steve Solon, Wayne Kaaz, or other DSS committee members for them to factor into the current planning process. The DSS committee meets 1 hour prior to EBoard meetings. Your active participation, especially with a shovel, is encouraged. Steve Solon and Wayne Kaaz have done a stellar job to date, and we all look forward to Phase II of this project.

Edmund G. Kline Dark Sky Site

The EGK Dark Site is open to all members. Special permission is required for guests. The combinations to the locks at the main gate and the warming hut should be obtained from the President or Vice President.

Please remember that white light disrupts the eye's dark adaptation and can ruin Astrophotography. The rules for the EGK Dark Sky Site can be found at the website. A few of them are reprinted here:

- Upon arrival at the site, check to see if sign-in has been instituted at the warming hut. We hope this will help alleviate problems members may be experiencing in trying to find a place to set up. (Updated 9/5/04)
- DAS MEMBERS have priority usage at the concrete pads. Holding a pad for friends is NOT allowed.
- Drive carefully on the road, there are blind spots in the low area and you will find cattle on the road at times.
- Try to arrive before dark.
- If you have to arrive after dark, turn off headlights when turning into site.
- Turn off all dome and trunk lights. If a light can't be turned off, pull the fuse, use layered red brake light tape or just duct tape over it.
- When you drive in, position your car so you can drive out directly instead of using your back up lights.
- Use only dim red flashlights. Never shine a flashlight in someone's face or on their scope.
- Serious astro-photographers may wish to use the South field since it is somewhat isolated from the rest of the area.
- No fires of any kind are allowed at the site. The microwave can be used to heat beverages only, but you may bring your own microwave if you want to cook or warm food. This requirement is for hygiene reasons.
- If you are the last person to leave the site, turn off the lights and the heaters in the warming hut. Then, lock the warming hut and close the gate to the site.

Lunar Occultations

The Moon moves in its orbit around the Sun and the Earth and frequently moves in front of objects in space. When the Moon passes in front of the Sun we call that an eclipse. When the Moon passes in front of another object we call that an "occultation." The most frequent occultations occur when the Moon passes in front of a star.

Lunar occultations come in two main

flavors: 1) is a total occultation, where the star disappears and reappears only once along a chord behind the Moon; and 2) a grazing occultation, when a star passes close to the limb, disappearing behind the projected mountains and reappearing in valleys of the Moon several times. This is similar to the projections of the Rocky Mountains as seen from the Denver area in early twilight.

Observing a total occultation is easy: simply set up the telescope at your favorite site, at the right time, and observe. To see a grazing occultation it is often necessary to travel some distance, setting up your telescope along a path that is only a few miles wide. Much like a total eclipse. Something crazy always happens during a graze, making the effort fun while collecting important data.

The timing of these events needs an accuracy of better than 1/10th of a second. Accurate data may be contributed to the International Occultation Timing Association. These observations help to refine star positions, discover close doubles, refine the orbit of the moon, and refine the exact diameter of the moon at the point(s) of contact. Back before GPS, these events could help to accurately determine a position on Earth.

Another type of occultation has been increasing in popularity these past few years and involves a star and an asteroid. Dr. Dan Durda and Dr. Bill Botke, both at SWRI in Boulder and past speakers at DAS general meetings, have filled us in on the details and value of asteroid observations.

You can obtain your very own occultation prediction software from:

<http://www.lunar-occultations.com/iota/occult3.htm>

for MS Windows-based computers. This program has been in constant development for decades and contains up-to-date data needed to make predictions. The table that follows contains bright star total occultations for Chamberlin for the next three months.

Dr. David Dunham, the driving force behind IOTA, was a member of DAS when he was living in Denver.

The main IOTA site goes into great details about equipment and techniques needed to record and report observations. But just watching an occultation can be interesting in itself.

There was an occultation of Venus early one morning that I observed from Ponte Vedra Beach in Florida. I had my tape recorder on, WWV blaring in the background, and my 4" f/15 refractor primed and ready to go. I was set to time the re-appearance of Venus on the dark limb near new moon. Just prior to the event, I decided to watch the event with the naked eye. It looked like a diamond had appeared on the limb of the moon. The reflection of Moon and Venus on the water was spectacular. This is an event that rivals my three total eclipse observations!

If you get a chance, give observing a lunar occultation a try. Dig into the IOTA website to learn more about observing these events. A list of occultations for the next three months for bright stars in the evening will be added to the website. Good luck.

--Wayne Green

DAS Officers and E-Board

Business of the Denver Astronomical Society is conducted at a separate Executive Board Meeting usually held at 8PM at Chamberlin Observatory, 2930 East Warren Street, Denver, CO 80210. All members are welcome. Regular meetings are held at Olin Hall, University of Denver's Main Campus.

Please see the schedule of events for meeting dates and times.

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MDT	UT	Mag	PA	Moon Elevation	RA	DECL
2006-04-10 20:36:39	2006-04-11 02:36:39	7.2	137	124	36 14.6	3 18 4
2006-04-30 22:45:12	2006-05-01 04:45:12	7.4	99	299	31 22.8	27 46 9
2006-05-03 22:25:23	2006-05-04 04:25:23	7.9	80	270	20 0.7	23 48 34
2006-05-04 19:58:02	2006-05-05 01:58:02	7.7	86	209	6 42.9	20 30 36
2006-05-04 20:36:04	2006-05-05 02:36:04	7.6	175	228	6 32.4	20 7 10
2006-05-09 20:35:03	2006-05-10 02:35:03	6.3	71	141	47 33.4	- 6 18 6
2006-05-09 22:28:54	2006-05-10 04:28:54	7.7	96	177	49 42.7	- 6 52 49
2006-05-29 20:29:37	2006-05-30 02:29:37	7.1	95	283	0 58.1	27 9 27
2006-05-30 20:36:57	2006-05-31 02:36:57	7.8	172	275	56 1.5	24 39 57
2006-06-01 21:12:11	2006-06-02 03:12:11	7.9	144	256	37 58.6	16 50 2
2006-06-03 20:54:41	2006-06-04 02:54:41	7.7	98	220	6 51.8	6 41 53
2006-06-05 21:25:06	2006-06-06 03:25:06	6.2	163	198	31 38.7	- 5 3 9
2006-06-06 20:17:39	2006-06-07 02:17:39	7	121	162	14 45.1	-10 22 13
2006-06-09 22:51:47	2006-06-10 04:51:47	7.2	105	169	48 3.3	-25 12 56
2006-06-28 21:49:14	2006-06-29 03:49:14	7.7	91	283	22 48.2	18 7 55

Occultation Table: These data were computed using version 3.6 of the WinOCCULT program, based roughly on Chamberlin Observatory's geographic position. The data were converted to MySQL and filtered for time and magnitude. Credits: IOTA, WinOCCULT and Walt Robinson.

Outside Star Parties

Early in April, Jim Burr of Jim's Mobile offered a 3 evening star party. He draws families from as far away as Kansas. During the first evening of the star party, two families indicated they had telescopes but were unfamiliar with how to operate them. They were encouraged to bring their telescopes to the event, where they gained insights and practice! The families had no real awareness of amateur resources along the Front Range. We handed out the DAS event card, so look for

visitors at the summer Open House and at regular Public Night Events.

Telescope Awards

DAS frequently receives telescopes that are lonely, want to be used again, and are looking for a good home. We pair telescopes with suitable users.

If you know of a needy amateur or know of someone that has a good telescope to donate let us know.

DAS Office Computer

Michael and Gail Lowe donated a PC for use as an office machine at

DAS. They also donated licenses for software. This will allow us to manage files, make limited copies, print mailing labels and otherwise live comfortably in the 21st century! Many thanks to Michael and Gail.

Newsletter Editor Returns

Never fear! Patti Kurtz, the usual newsletter editor will return next month.

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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 to maintain since its founding in 1952.

The DAS is a long-standing member 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 the historic telescope and observatory 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 Chamberlin Restoration Fund, and the EGK 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.

Membership Application Form

New Member _____ Renewing Member _____
Name _____
Address _____
City _____
State/ZIP _____
Phone Number _____
Email _____
PDF Form of Newsletter Only (YES / NO)
Regular Member (\$35) _____
Student Member (under age 23) (\$12) _____
Sky and Telescope Subscription (\$32.95) _____
Astronomy Magazine (\$29) _____
Donations:
Van Nattan-Hansen Scholarship Fund _____
DAS Public Outreach _____
DAS General Fund _____
TOTAL*:
EGKDS (Dark Sky) Fund* _____

*Please make Dark Sky Site donations payable to DAS EGKDS Fund and mail to Steve Solon, 9774 W. Elmhurst Place, Littleton, CO 80128. Please make other checks payable to Denver Astronomical Society and mail together with this form to Brad Gilman, DAS Treasurer, 7003 South Cherry Street, Centennial, CO 80122-1179



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