

OBSERVER

Newsletter of the Denver Astronomical Society
One Mile Nearer the Stars

Solar System Show Stoppers

Recently a naked eye comet has graced our early evening and morning skies—Comet Ikeya-Zhang passed closest to the sun on March 18 and is now speeding out of the solar system. It will pass closest to Earth on April 29. To see it still you'll have to rise early and look to the east. Binoculars should make spotting it easier, but no one is yet sure how bright this interloper will get. Scientists think Ikeya-Zhang was seen in earlier travels through our space in 1661. Tom Teters imaged the comet on March 9, 2002 while it was about 40° above the horizon in Pisces.

Not only do we have a comet to catch during the semi-dark, but all five bright planets are falling into a glorious lineup that will tighten in May and June for the finest assemblage of these wanderers in almost 20 years. The next couple months will surely be a visual delight. Enjoy!—PK

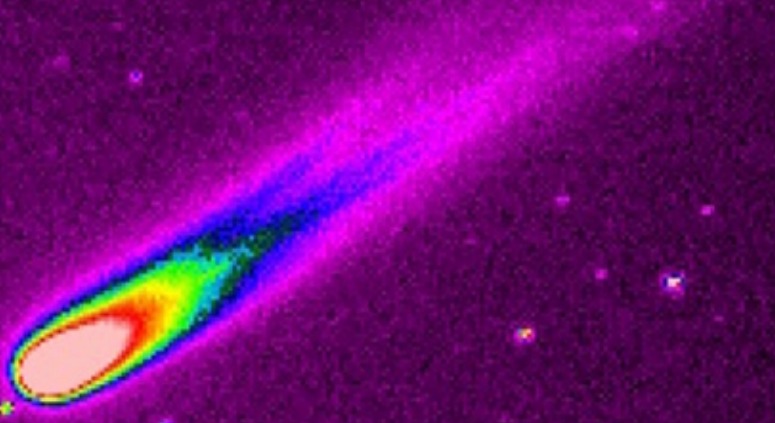


Image: © Tom Teters (Northern Colorado Astronomical Society), 2002

To Ed, With Love

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APRIL SKIES 2002

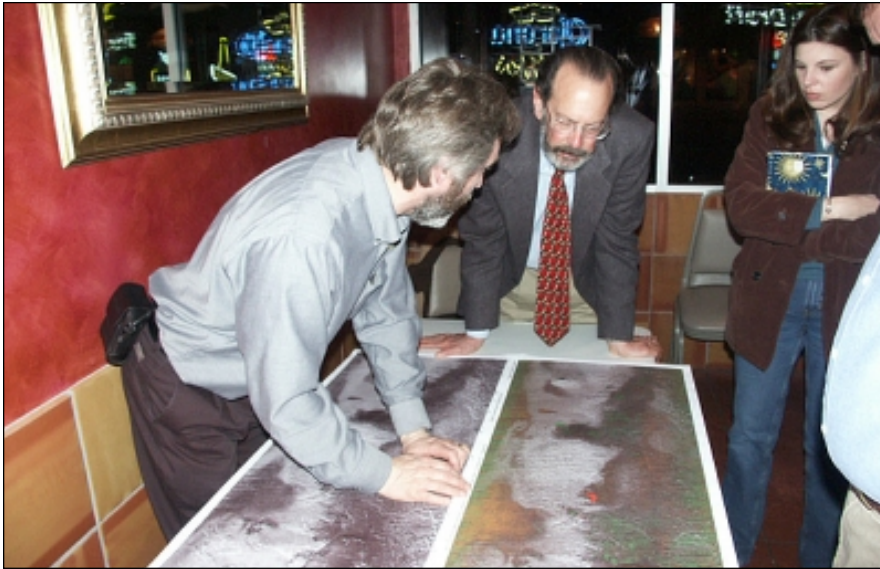
Photographers prepare yourselves and your cameras. A spectacle not seen in almost two decades is beginning to dazzle our nights and by month's end a 50mm lens will be able to capture all five of the bright planets—Jupiter, Saturn, Mars, Venus, and finally in the second half of April, Mercury (actually a planetary lineup occurred in May 2000, but it was during daylight hours). Whether you're a shutterbug or simply love the view, the show is just beginning as the lineup shrinks closer together for an extraordinary grouping next month. On May 15 the fabulous five, along with the Sun and Moon, will all be contained in an intimate encounter of only 48°. Until then, we can watch and enjoy. Of course, comet Ikeya-Zhang is worth a look or three, but if you haven't seen it yet, it's time to get serious—reports say it will be fading in the next couple of weeks. With all this heavenly activity going on, I hope you get outside to observe and that your April showers are only of the celestial kind.—*Patti Kurtz*

- 4 Last quarter moon
- 12 New moon
- 17 The moon passes 0.7° north of Vesta at 4 A.M.
- 20 First quarter moon
- 22 Lyrid meteor shower peaks
- 26 Full moon



Like obedient soldiers, the planets are beginning the evening lineup that astronomers and astrologers alike have been awaiting.

Image: © Joe Gafford, 2002



Dr. Roger Clark (left) was a smashing success as the speaker for the Spring Banquet held at the Blue Bonnet on March 30. In the photo above he shows Larry Brooks and Carla Swartz the new Mars maps he's been working on.

PRESIDENT'S CORNER

DAS member Ed Kline passed away on the morning of March 13, 2002. He will be well remembered as a major powerhouse behind getting the Dark Sky Site started. As the idea grew, his experience with other sites and clubs helped us to do it right. In his honor, the Dark Sky Site will be named the "Edmund G. Kline Dark Sky Site."



Additionally, he contributed to the club as a Vice President, an E-board member, teaching Star Hopping Classes, and working at public nights. Ed was selfless in his contributions to the club and to amateur astronomy in Denver. Ed had a profound impact on everyone he came in contact with and will be missed by all that knew him. His knowledge and love of astronomy will continue to live on in those he touched over the years. He will be missed very much. — *Larry Brooks, LBrooks100@aol.com*

DAS Schedule

APRIL

- 5 E-Board meeting, 8 P.M.
- 12-14 Dark Sky Site Weekend
- 20 Observatory Cleaning Day at 10:00A.M. and Open House (begins at 7:00P.M.)
- 26 General Meeting at Olin Hall, DU, 7:30 P.M.—Dr. Mark Vincent, (University of Colorado) "South Pole—Life in An Up-Side-Down World."

MAY

- 3 E-Board meeting, 8 P.M.
- 10-11 Dark Sky Site Weekend
- 18 Observatory Cleaning Day at 10:00A.M. and Open House — "Planetary Showcase" (begins at 7:00P.M.)
- 24 General Meeting at Olin Hall, DU, 7:30 P.M.—Declan O'Donnell, "Space Law."

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

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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 society.org

LAS Opens Season with the Fourth Annual North Sterling Star Party

DAS members are once again invited to the annual Sterling Star Party at North Sterling State Reservoir in eastern Colorado. Sponsored by the Longmont Astronomical Society (LAS), the star party will be held on April 12-14.

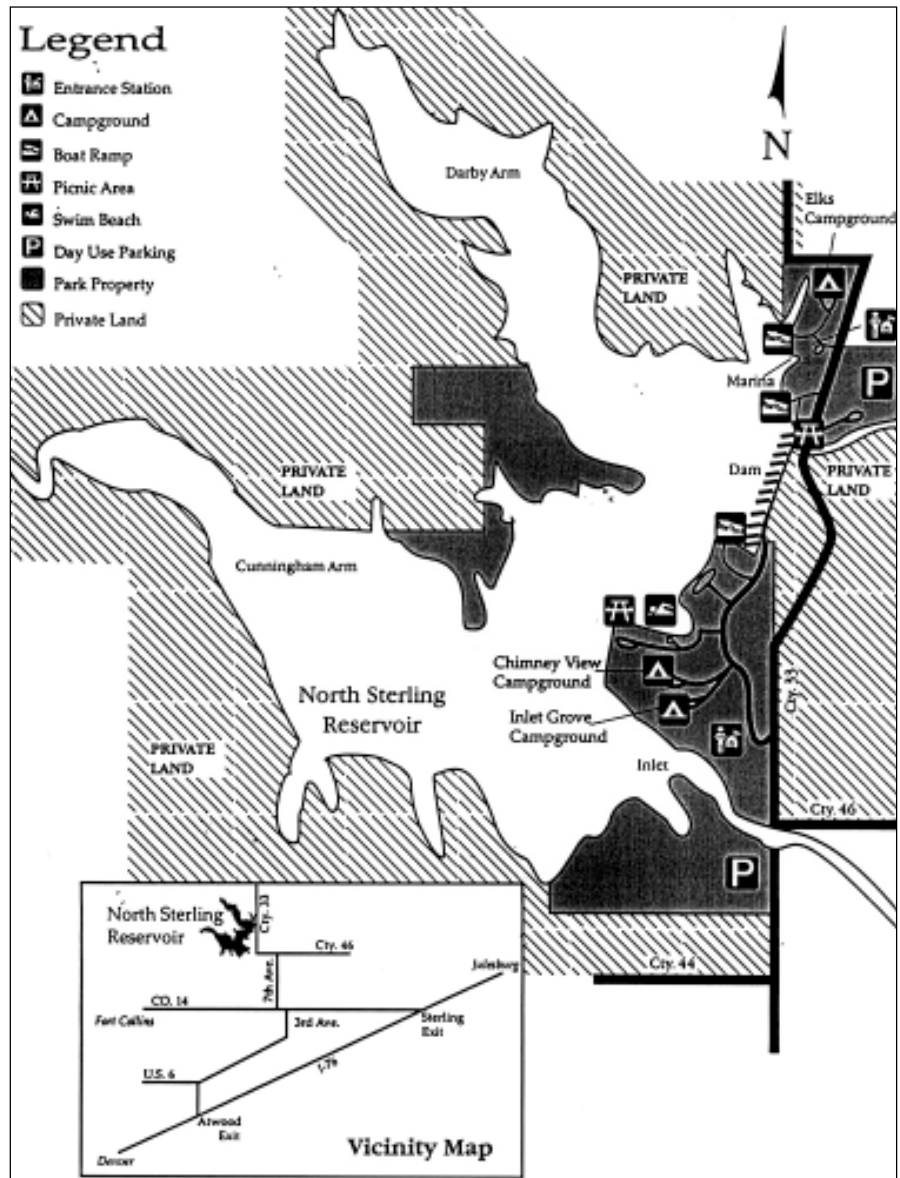
The reservoir is a three-thousand acre lake with three campgrounds about 15 miles north of Sterling. Bob Loomis, state park ranger there, has given this event the top campground on top of the hill above the middle of the lake where there are no visible lights. Restrooms are available at the site with hot water and showers. Dave Street, President of the L.A.S., said there is room inside the heated restrooms to warm up when needed.

Street said, "My understanding is that the overnite camping fee has been waived (for Friday nite and Saturday night), but the day use fee (\$5/day) is still required. However, if one has an annual Colorado State Park Pass, there will be no charge. The "no overnite camping fee" arrangement applies (I believe) only to a specific area and not the park as a whole. Likely most people will not arrive until Saturday due to the length of the drive (about 2-3 hours from Denver/Longmont area)."

Daytime activities at the reservoir include fishing and boating, and plenty of hiking trails. Star parties in the past have drawn more than 200 people from Sterling and Brush due to publicity from local television stations and newspapers.

If the map to the right doesn't work for you, maps and directions are also available on the Sterling State Reservoir web site (http://coloradoparks.org/north_sterling/index.asp).

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.



Map of North Sterling State Reservoir

Note from the editor:

Newsletter contributions (ccd and film astrophotos, members with telescopes, star party candid, short observing anecdotes, observing and imaging tips, etc.) are welcome and encouraged. This is your chance to strut your stuff! **Please submit by the 20th of each month as follows:**
Film: Glossy prints by mail** or scanned and uploaded (high res.) to the listserv upload area.
CCD: Uploaded to the listserv upload area (resolution as high as possible, please).
Text: Articles should be no more than

250 words, please, unless we've spoken about a longer feature. Please paste article(s) into an email and send to me at: 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
(303) 948-5825*

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updates

Letter to a Friend: We'll miss you Edmund G.

by
Steve Solon

(This issue of the Denver Observer is dedicated to Ed Kline, a beloved member who died on March 13, 2002. His continuous support and dedication to our organization was extraordinary and without him, the finding and acquisition of the DAS Dark Sky Site would have taken much longer, if indeed, it would have ever happened. He wasn't around much when I was, therefore I didn't get to know him as well as I'd have liked. I didn't even get to say "good-bye"—I thought we had more time. There's a lesson there. Love and hug your loved ones like you might never see them again: life can change in an instant. I'm glad he knew we were dedicating the Dark Sky Site to him. I understand he was happy about that. Following is a beautiful letter to Ed written by Steve Solon. I'd only like to add one thing—To Ed: Keep the biggest scope you can find set up for those of us that will someday follow you up that stairway to the stars. We'll be looking for observing buddies.—Patti Kurtz)

Dear Ed,

I got to thinking about something a while back . . . about how, at this stage of life, if you've met someone you wished you'd known all your life, how lucky you would be. Funny, how I got to thinking about you.



Photo: © 2002, Steve Solon

Edmund G. Kline (1940-2002)

Now, you've had to move on. You've started that great journey that comes to all of us, sooner or later; in your case, much, much too soon. I suppose this is what we're dealt in the game of life . . . take your hand, make the best with it, and be happy. So I wanted you to know what your 'best' was for your friends in astronomy.

It's not unusual, now, for folks to remember the "Ed" that was here with us. You added so much 'spice' to our little band of star watchers in everything you did; it was exciting to be around those qualities of yours. . . your assuredness, knowledge, gentleness, determination and, most

of all, your patience and willingness to listen.

Star parties . . . we did enough of 'em, eh? You and kids . . . now there was a picture. If anyone was capable of taking kids by the hand, literally and intellectually, and explaining the whole of the universe to them so they could understand, it was you. I'll always remember hearing laughter from your assembled group at a star party and wondering what the hell was going on.

A dark site . . . you wouldn't rest until we had one. From your experiences with the Lehigh Valley and Miami Valley astronomers, you knew there was no choice but that we should have one.

observers deck



The Andromeda Galaxy (M31)

Effort? Yes. With time?

Yes.

But now we have one.

If we'd reimbursed you for the mileage on your Saturn, we'd be broke, but you found us a place, out in the middle of God-knows-where, but that's where it's dark, isn't it? I know you knew of our intent to rename this piece of real estate, but you left before you got to see the plaque doing so. It says:

"Every journey to the stars begins with a dream and something else you can't quite put your finger on.

You've always known what that 'something' is and have given so much to help us all discover it. From this day forward, the DAS Center For Astronomical Observation and Discovery is, henceforth, known as the 'Edmund G. Kline Dark Site.' With our love and thanks always, The Denver Astronomical Society, March 5, 2002."

Now, when we asked, your wonderful wife, Debbie, told us you would be very honored to have us name the site for you, and I figured there just couldn't be anyone else's name for it.

I don't think I've ever been in the company of a more consummate master of sly humor . . . you should've tried acting. I don't know how anyone

could keep a straight face with some of the things you did, especially slipping rogue slides in the public night shows and then standing by the door, grinning, as we stumbled our way through this new stuff. Always the perfect gentleman, though, when we'd turn the program over to you to explain these slides . . . didn't figure we'd turn it around, did ya?

As to your current whereabouts, I have a feeling I know right where you are. You once told me, on the way to a star party for Easter Seals, that you'd head for Andromeda if there was a way; you always wanted to see the galaxy up-close. I hope it's everything you imagined with your 8-inch scope. Kind of interesting that Andromeda is setting with the Sun right now; that's where we'll look for you.

Well, Edmund G., if there's any group that could miss you more or wish you peace, it's all of us, your friends who love to watch the sky. I hope you'll

find the time to wink down at us from time to time . . . we'll be at the dark place you wanted for us, doing what

*"Ed Kline was a fascinating individual and one of the best star-hoppers I have known. His enthusiasm and instruction rekindled my interest in astronomy education, visual observing, and star hopping."
— Greg Marino*

you'd be doing. None of us has anything powerful enough to see that wink, but we'll all have a little different reason, now, to look harder. Peace on your journey, friend.

Love, The DAS



Photo: © 2002, Patti Kurtz

Holiday Smiles

Debbie and Ed Kline smile together forever in this photo made at the DAS Holiday Banquet in December, 2000.

observers deck

The Road to Light Phobia

by Craig Anderson



I'm new to this telescope-observing thing and over the past six months I've learned a lot from watching other astronomy buffs at their scopes. It seems that accepted behavior of observing in groups is usually learned this way. One tradition that is immediately apparent and caustically enforced within such observing groups is Light Phobia. I have learned from the observing old timers to reward light generation with loud indignation and find myself piously critical of light generation by others . . . especially if the act isn't preceded by loud vocal alarms, chest pounding and pleadings of humble regret.

Obviously, looks can fool. However, it seems that most people describe me as somewhat contrary, at best. Not wanting to disappoint, but, what has become of me? There I stand, mimicking and crying fowl with the crowd. Is it the awe of the cathedral of the night sky that leads me to copy these veterans? Are they priests in a long tradition of observing etiquette that extends back to Babylon's religion? In the quiet darkness their shadow-like ministering to the viewing devices seems to confirm this. The silence is broken only by an occasional red light at an altar of eyepieces and star maps. Is it old age that makes me comfortable wallowing in this conservatism? I decided to conceal my shame and test my faith behind the scenes. What follows are some mainstream, some quaint, and some curious things I discovered as a doubting pilgrim on the road to Light Phobia.

Since we are looking at objects very far away, it would seem our goal is to get as many of the little photon-like things from those objects onto the retina of our observing eye or eyes. Of course it is possible to get too much light to the retina, when observing the moon, for example. But, generally, this light

gathering is a very major goal. From a humble look at the literature, it seems that our ability to get this light from the eyepiece to the retina is dependent on three things: the eyes we're born with, how long we've used the eyes, and how we control our viewing environment. We'll briefly look at each.

We can't trade in the eyes that we are born with but if you are selecting a Messier Marathon team keep in mind that, all things being equal, people with brown eyes dilate faster and dilate wider. People with hazel eyes are mediocre and people with blue eyes are absolutely undesirable. Just forget about an albino Messier team. Also keep in mind that eyes are most sensitive to light and dark between five and twenty degrees from the center of your field of view. The central six to ten degrees has cones for distinguishing color and other artsy nonessentials. Thus, to nail faint fuzzies avert your vision, but not too much.

We are also unable to change how long we have used our eyes. Sadly, the transparency of your vision and the amount your eyes will dilate is related to age. It is a very linear relationship—your age can be pretty accurately determined by measuring your eye anatomy. If you are an adult of voting age the ability, on the average, of your pupil to dilate in millimeters equals ten minus your age in decades. Thus a person forty years old will have an average dilation of 6mm that will steadily decrease to 5mm at age fifty. This, combined with decreasing transparency, also means that if you select a sixty year old for your Marathon team, that person will need a 10-inch reflector to gather as many photons as a high school senior could gather in a 6-inch reflector. How the brain analyzes what the retina displays is an entirely different matter! It also means the 7x50 binoculars that were so great when you were young, wild, and crazy might better be replaced with 8x40s and a smaller exit pupil when you reach the mid century mark.

The dilation and contraction of the pupil is automatic and is called the pupillary reflex. It is a response to the presence of light, emotional stress, and looking or focusing on close up details. In general, it is bilateral. That is, both eyes act in unison. Thus, it

does no good to close only your observing eye if an artless simpleton passes a bright light through the observing area. Nor does it help to use your non-observing eye to close focus on star maps. In both cases, the damage is shared with both eyes and you must await some dilation.

How fast is dilation? I found no empirical tests but the literature seems to agree on fifteen minutes from minimum to maximum, and a mere five seconds for the opposite. The speed and amount of dilation is a function primarily of the color of the light and/or the distance of the object that you focus upon. Red is the best, white is mediocre and blue terrible. Do I see a star color sequence here? Your pupil is constricted for close-focusing a la star maps and the total dilation is adversely affected by emotional stress.

In summary, it seems that universal castigation of white light generation amongst observing groups is supported by empirical studies. Perhaps the reaction should be expanded to physical violence for blue light? It also seems that star maps should be used sparingly and should be read without close focusing. Warming room conversation? Let's keep away from politics and talk about favorite foods. Avoid the dark site when income taxes are due. Finally, there is a test used in emergency rooms called the ciliospinal reflex. Pinching the skin on the left side of the back of the neck usually provokes a bilateral pupil dilation. And you thought I just had a nervous tick when I approached the eyepiece!

Welcome New Members!

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

- Tim Bromell
- Robert Fenstermacher
- James Fouch
- Todd Hitch
- Stephen Jude
- Will Kiarsis
- Jim Pollock

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For Sale

12.5-inch f/4.8 solid-tube Dobsonian Discovery Prototype

Includes:

- 12.5-inch f/4.6 solid tube (64 inches long)
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- Telrad

Contact Dennis Cochran, Home phone: (720) 870-0465, Work phone: (303) 677-4721.

Dark Sky Site Courtesy

Please remember that white light disrupts the eye's dark adaptation and can ruin astrophotography. Following these simple guidelines will improve the experience for all:

- ★ 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.
 - ★ Please wipe your feet carefully before using the warming hut.
 - ★ Please chip in and do some cleaning up in the hut or at the observing sites. It is the responsibility of all users to keep the place nice.
 - ★ Serious astrophotographers may wish to use the South field since it is somewhat isolated from the rest of the area.
 - ★ 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.
 - ★ Members are responsible for educating their guests as to the rules.
 - ★ Prospective members, out of town astronomers, and others may be guests one time.
 - ★ Members can bring family any time and personal friends on a limited basis, but should not abuse the privilege.
 - ★ Groups of five or more guests must be cleared through the President or Vice President prior to visiting the Dark Sky Site.
 - ★ There is no sleeping in the warming shed overnight. However if you need to nap for a short period, you can use the shed. We would rather you fall asleep there rather than at the wheel on the way home.
 - ★ You may warm drinks in the microwave—it is not there for warming food and cooking since we have no water to clean up. If you spill, please clean up after yourself
- OTHER SUGGESTIONS:**
- ★ Wear warm clothing. The nights can be extremely cold in the winter and surprisingly cold in the summer.
 - ★ Bring your own power such as a battery and/or an inverter since the power sites are limited. Also bring extension chords.
 - ★ Hot drinks can help you survive the night!
 - ★ When approaching the telescope of someone who does not know you, introduce yourself and ask before looking through the scope. Most members (with the exception of astrophotographers when they are taking pictures) will be happy to share their scopes.
 - ★ Bring your own toilet paper in case that in the porta-potty runs out.

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-70 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.

for sale

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	<input type="checkbox"/>
Renewal	<input type="checkbox"/>
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?	
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<i>Please Circle All That Apply:</i>	
Regular Membership: \$30	Associate: \$10 (<i>Age 22 and younger</i>)
..... \$ _____	
Astronomy Magazine/\$29	
Sky & Telescope Magazine/\$29.95	
..... \$ _____	
Van Nattan Scholarship Fund	\$ _____
Chamberlin Restoration Fund	\$ _____
Total Amount Paid	\$ _____
<i>Please mail Dark Sky Site donations to: DAS Treasurer, Chuck Carlson, at the address below. (Make checks payable to the Dark Sky Site Fund). Please 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</i>	



Denver Astronomical Society

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

APRIL'S MEETING

APRIL 26:

Dr. Mark Vincent, "South Pole—Life in An Up-Side-Down World."

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join us