

The Denver Observer

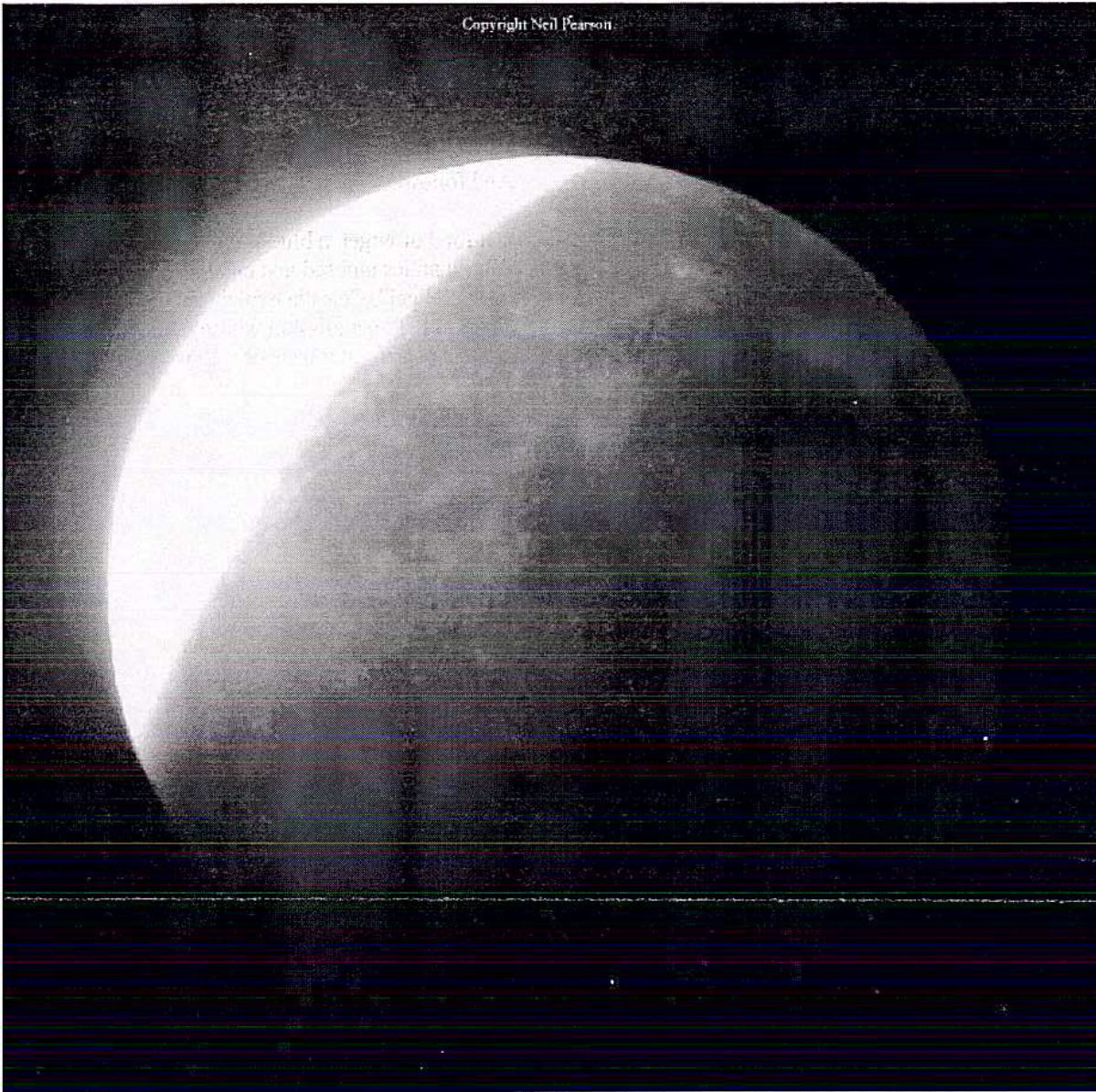
December, 2003



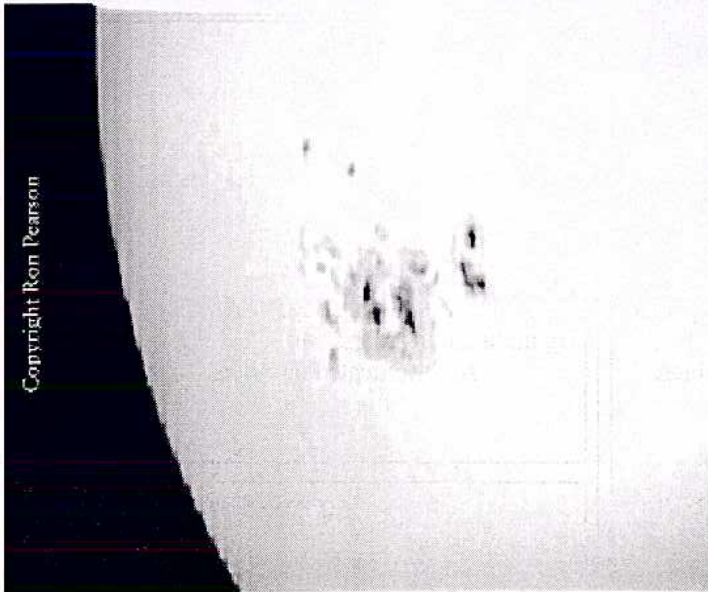
Copyright Joe Gafford

Taken 10/29/03 at 1:57 am MST in Joe Gafford's back yard. Minolta Dimage7 digital camera. 30 second exposure. The bright streak is through the "sickle" of Leo.

Copyright Neil Pearson



Lunar eclipse photo taken Nov. 8th at Chamberlin Open House w/ Olympus 1.3 meg digital cam., handheld afocal projection with 6" f/8 Newtonian.
Neil Pearson



Copyright Ron Pearson

Sunspot group 486 taken on Oct. 25th w/ToUCam, & Baader off axis 5.75" filter on 12.5" f/6 newt. Group 486 produced some of the largest flares recorded and produced aurora in Colorado. Photo taken w/Mogg 0.6 focal reducer, stacked and processed in Registax 2.2.
Ron Pearson

A Second Visit From St. Celestia: The Night Sky Fairy Rides Again

by Sandra J. Shaw

with an LED redlight to Clement Clark Moore

'Twas the Messier Marathon; all through the field
One hundred ten objects our search should reveal –
Ev'ry Messier object to be found in one night
Was our quest for a project of wonderful sights.
Jane with her binos and I with my scope
Set up our equipment, excited with hope.
We'd carefully plotted our Messier session
To maximize luck to fulfill our obsession.
Our charts were all organized, times were assigned
To locate each object, secure in its find.
For weeks we had practiced observing the sights
Until all our starhops were swift and just right.
Our snacks were selected as strength-giving foods
To keep us observing at cold altitudes.
Strong tea in a thermos was sweetened and hot
Burritos kept spicy and warm in a pot.
For an energy boost, last but not least,
Chocolate chip cookies concluded our feast.
But just after dusk, and when we began
Observing misfortunes derailed our plans.
The neighbors were back with more mega-watt lights
Offending the dark sky with photons of blight.
I knew I was gripped by a star-hopping malady
When I could not locate the very first galaxy.
Pisces was setting so quick in the west
That M seventy-four would just not manifest.
While other scopes now pointed far to the east
I'm frantically hunting that very first beast!
Snowflakes were starting to swirl through the air
And temperatures dropped – it just didn't seem fair.
My red light had faded, its battery dead
While drizzling hail peppered down on my head.
An evil chill wind struck, which made us all reel
And scattered my finder charts throughout the field.
My feet and my fingers were numbed by the cold
As further disasters began to unfold.
Our energy food stash was found to be lacking
The attributes planned for nutritional snacking.
The thermos of tea, brought to keep us awake
Turned out to be decaf - a major mistake.
Burritos, though warming, brought on more distress
As they leaked out their juice on my new fleecy vest.
The cookies, while tasty despite all our fumbles,
Dissolved in a mess of small chocolatey crumbles.
While brooding about all these problems of mine
I heard from the next site a whimpery whine:
"My pen will not write; the ink in it froze
And something is dripping from out of my nose!"
Discouraged and shivering, chartless and stained
Abandon the task for which we had trained?
But a comet approaching us promised great cheer
As we recognized magical friends from last year.

The comet, a sleigh pulled by seven live stars,
Had brought St. Celestia from nebulae far.
As gorgeous as ever with reddish-gold locks
She cooed and she coaxed as she spoke to her flock.
"On Betelgeuse, Sirius, Mira, and Rigel,"
And followed three others – but where was our
Nigel?
We'd grown fond of Nigel, a blue star so young
Whose antics amused and created great fun.
"My feisty blue Nigel", Celestia explained
"Is engaged on a mission whose purpose is plain."
"Sending wishes for Marathon success to you all,
Young Nigel is planning to visit this fall."
Then turning to our astronomical woes,
She vanquished the cold, and the hail, and the snow.
My feet and my fingers now quickly rewarmed
While my friend's runny nose could no longer alarm.
The flashlight's dead battery then was revived
And the pen's frozen ink soon flowed liquid and live.
My charts that were scattered by windy attacks
Assembled themselves in an orderly stack.

Regarding our woeful, inadequate food
Celestia transformed it with methods quite shrewd.
"Your tea, which was herbal, now's full of caffeine
To ensure that you'll not fall asleep at the scene."
"Burritos that trickled out, staining your vest
Are rewrapped securely, the juice to arrest."
"That vest, so attractive in midnight sky navy,
Is cleaned of its douse by burrito-y gravy."
"The cookies that crumbled are crispy and whole
With chocolate virtues I'm proud to extol."
Surveying my telescope aimed to the west
She tactfully showed me the way easiest
To locate the fuzzy so close to horizon -
And there, in the scope, I feasted my eyes on
Elusive M object, that seventy-four -
Then other M targets were never a chore.
But one final problem obstructed our passion -
The mega-watt lights that our neighbors still
fashioned.
Celestia regarded the eye-searing glare
That assaulted our brains and night-vision impaired.
Extracting a wand, starry-tipped, from her pocket
She popped out the lights like a plug yanked from
socket.
And now that our night eyes could see fainter mags
We searched for those objects we wanted to bag.
The galaxies, clusters, and nebulae vast
Swam into our eyepieces easy and fast.
By midnight the Virgo stuff all was a wrap
And we treated ourselves - a refreshing short nap!

(Continued on page 4)

ASTRO-QUIZ!!

Q. What were the "Medicean Stars"?
-Answer on page 7-

(Continued from page 3)

By almost four-thirty, we'd done Sagittarius
As morning approached, we observed things
Aquarius.
A slight orange glow in the east foretold dawn
While we searched for M30 in goat Capricorn.
That final M object, a globular cluster,
Drew on our last energy, strength we could muster.
And there, in the twilight, we saw through the ocular
A blob oh-so-faint, which caused comment quite
jocular.
That finished the list of the Messier items –
We cheered and we laughed at our fine plan to sight
'em.
Celestia just smiled at our boisterous play
As she harnessed her stars once again to the sleigh.
While mounting her comet-sleigh into the sky,
She called out that Nigel's return would be nigh.
Then spiralling up, though we wished she could tarry,
Away flew Celestia, the smart Night Sky Fairy.
And I heard her exclaiming, "You folks are the best –
Your Messier Marathon's been a success!"

President's Column



Once again, another year is coming to a close. I'd like to thank everyone for your participation and contributions. We have had a tremendous year and our accomplishments are numerous. Through our individual efforts, we have collectively continued to strengthen the DAS as a club and remained a vital resource for our community. Here is a snapshot of our achievements in 2003.

The open houses we hosted were widely attended by DAS members and the public, despite the challenging weather. Our three largest events, two lunar eclipses and Mars Madness, were huge successes. We worked with local media to publicize these events and bring a greater awareness of amateur astronomy to the public. In addition, we have worked with Public Access TV on a program called "The Edge", discussing seasonal occurrences in the Colorado skies. Working in conjunction with the Denver Museum of Nature and Science, Colorado Astronomy day was once again a hit. Throughout the year, we gave presentations and held small star parties for over ten schools and community centers. By visiting the Little Thompson Observatory in Berthoud, we learned about their facility and how they approach public functions.

Our public night team had a stellar year. Thirteen new operators participated in training on the scope and five of those received their certification to operate the 20" Alvan Clark. We continue to enhance our public night lectures visually with the aid of PowerPoint presentations and an LCD projector. With the development and implementation of the online reservation system, we were able to cancel our answering service and save the club several hundred dollars a month. We have also increased our awareness of safety precautions and procedures.

The EG Kline Dark Site committee continues to work towards providing first-class facilities that make our observing trips very comfortable. The vault privy was installed and we have a permit to complete work on the warming hut, concrete pads and electrical. Also, a Restoration and Maintenance committee was formed to focus on conducting much needed work at Chamberlin.

We've had a number of great speakers at our general meetings. Our last meeting, the Show n' Tell, allowed nine of our ambitious members to present their equipment-related projects and share with us some incredible ideas. This year's auction raised over \$400 for the Van Nattan scholarship fund, as the DAS Participation Prize program enters its second year recognizing member participation.

Our numerous banquets and picnics have helped us gain much needed weight for those windy nights observing, while our newly redesigned DAS jackets keep us warm. To help make certain those nights are dark, we continue to spread the word about light pollution issues and proposed rules and regulations for outdoor lighting. The Astronomical League has a new DAS coordinator and we have numerous members who have received observing certificates over the course of the year.

Furthermore, the position of President Emeritus was created to honor Larry Brooks' many years of dedication to our club. His vision and passion have laid the foundation that allows the DAS to continue to flourish. Best wishes to all for a joyous new year filled with clear, steady skies.

Carla Swartz

DECEMBER SKIES 2003

Ron Mickle

Well, it's December and what? No total lunar eclipse, no Leonids, no close encounters with Mars? Sorry---but let's not ignore good old **Saturn**.

On December 31, the second Jovian planet will be at opposition, rising in the east at 5:31p as the sun sets around 5:43p. With the southern face of its brilliant rings open to us, Saturn will reach a magnitude of -0.5 on the 31st. The apparent diameter of the globe will be 20.6 arcseconds, while the rings will be 46.8 arcsec. Compare Saturn's diameter, as seen from Earth, to that of Mars in September, which was 25 arcseconds. Here are some things to look for in viewing Saturn.

- ▶ The two most visible rings, A & B, are separated by the darker Cassini division. Look for the division and Rings A & B.
- ▶ The globe of Saturn has belts and zones running east-west. When the observer's eyes are dark adapted, he or she should be able to make out the subtle hues of the zones.
- ▶ Of the 31 known Saturnian moons, five should be visible through telescopes with apertures of 6-inches or more. For the location of the moons relative to Saturn, go to <http://ssd.jpl.nasa.gov/horizons.html>.

Shortly after sunset in early December, look for both Mercury and Venus above the western horizon. Remember that both go through phases similar to the Moon.

Also, the Geminid meteor shower peaks in the early morning of the 14th. A waning gibbous (not to be confused with a small monkey) Moon may obscure the fainter meteors, but with Geminids r-value of 2.6, it should still produce some bright magnitudes. The radiant will be located just north of Castor (*a* Gem).

And of course, be on the lookout for that annual aeronautical event, sometimes confused with an astronomical event, on the evening of December 24. Aircraft crews usually mistake it for a UFO. NORAD has tracked it on radar for years, determining that the object has eight powerplants and a fuselage made up of the composite material cellulose, ferrous and other metals. The radars on F-16's have determined that it is staffed by at least one human, with cargo consisting of every conceivable material known to humankind. Initial sightings by astronomers every year have mistaken the bright red glow emanating from front of the highflying object with that of the bright red star Betelgeuse in Orion. Radar stations have determined that its point of origin is approximately 90 degrees north latitude.

Remember that members of the Denver Astronomical Society have free access to the Clark 20" at the Historic Chamberlin Observatory during Open House.

December Schedule:

- 8.....Full Moon
- 14.....Geminids meteor shower peaks
- 16.....Last quarter moon
- 22.....Winter Solstice, 00:02pm
- 23.....New Moon
- 24.....Recurring UFO sighting
- 30.....First quarter Moon
- 31.....Saturn at Opposition

Astronomy Magazine, December 2003

Sky & Telescope Magazine, December 2003

Astronomical Calendar 2003

THE CHRISTMAS STAR - AN UPDATE

Dr. Charles Carlson

The problem of the Star of Bethlehem and determination of an exact date of Jesus' birth has fascinated scientists and scholars as well as the general public since the birth of modern astronomy. In fact, Kepler was the first to consider the problem and he did propose a possible solution. Since his time, many other theories have been proposed, mostly involving conjunctions of astronomical objects. Most recently, interest in the subject has increased with the advent of personal computers and sophisticated planetarium programs. It is now possible for anyone, astronomers and laymen alike, to investigate the problem by running computer simulations.

In 1999, two books appeared written by professional astronomers. British astronomer Mark Kidger proposed a solution

based upon planetary conjunctions which occurred in 7 and 6 BCE, plus the appearance of a nova in 5 BCE. Rutgers professor Michael Molnar came up with a complicated explanation based upon Greco-Roman astrology and a conjunction of sun, moon, Saturn and Jupiter in Aries which occurred on April 17th, 6 BCE. I worked up a presentation on these two books that I presented to several audiences, including the DAS. Since then, David Levy published an article in *Parade Magazine*, the rotogravure section in the Sunday paper, on December 23, 2001. Levy described a series of conjunctions involving Jupiter, the royal star Regulus, and Venus that occurred during the years 3 and 2 BCE.

At Observer editor Pat Ryan's request for an article appropriate to the season, I decided to investigate further. And, of course, the obvious approach these days is to do a web search. Checking Google.com, I discovered that there are more than four million references to the Christmas star on the Internet. However, my search was greatly simplified when I found a brief but authoritative list of on-line references compiled by John Mosley of Griffith Observatory:

www.griffithobs.org/StarofBethlehem.html. Several references give greatly expanded explanations of the theory outlined by Levy. I found a number of intriguing facts. For example, Zoroaster, the 7th century BCE founder of the Zoroastrian religion, predicted that a King/Messiah would be born to the Jews when a sign appeared in the constellation Virgo, a prophecy that would have been known to the Persian Magi. In 3 BCE, there was a conjunction of Jupiter, the royal star, and Venus, the virgin mother, in Virgo, joined by Mercury in Leo, the symbol of the tribe of Judah. Then, on June 17th the next year, there was a conjunction of four planets, again in

(Continued on page 6)

January Speaker

Our speaker for the January meeting will be:

Dr. David Grinspoon: Principal Scientist-Dept of Space Studies-Southwest Research Institute

Topic: A presentation on his new book:

LONELY PLANETS: The Natural Philosophy of Alien Life

Participation Prize

The DAS participation prize for this quarter will be a pair of 10x50 binoculars AND a choice of one years membership to DAS or a subscription to *Astronomy* or *Sky and Tel* magazines.

Frank Mancini, Vice President

(Continued from page 5)

Virgo. Jupiter then moved to the west -leading the Magi ? - in a retrograde motion which ended precisely on December 25th, 2 BCE(!).

There is much more to this story and, for those interested, I recommend two websites:

California amateur astronomer Susan S. Carroll has probably the best article

sciastro.net/portia/articles/thestar.htm

An animated program done by Mosley for presentation at Griffith and shown on MSNBC. Go to: www.askelm.com, click on "The Star of Bethlehem" under Books Online, follow link to Mosley's program.

Just a short note here, folks. Due to the great photos, some of the regular stuff like the Dark Sky Site rules couldn't make it for this issue. Don't worry, it'll all be back next time. A thanks to all those who contributed to this issue. *Pat*

ANNUAL DAS HOLIDAY POTLUCK

Saturday, December 6, 5:00 pm
Chamberlin Observatory

The DAS will provide plates,
utensils, napkins, cups, ice and
drinks.

BE THERE!!

HOLIDAY OPEN HOUSE

Celebrating their 31st year!

S & S OPTIKA

Saturday, December 13, 10 am to 4 pm

Victor from Celestron, featuring the Advanced GOTO

Mark from Pentax with an intro to the new Pentax XW eyepieces

Tom from Software Bisque with Sky Software demos and Astro
CCD cameras

Randy & Judy from Astro Systems with lots of astro jewelry,
scope covers, and accessories

Dan from Swarovski, showing the new spotting scope
& EL binoculars

5174 South Broadway

Englewood, CO

Southwest corner of Belleview & South Broadway

In the Brookridge Shopping Center

303-789-1089

OFFICERS AND E-BOARD of
THE DENVER ASTRONOMICAL
SOCIETY

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

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WWW.DENVERASTROSOCIETY.ORG

SCHEDULE

DECEMBER

- 5 8:00 PM E- Board meeting, Chamberlin Observatory
- 6 **Holiday Potluck, 5:00 pm; Chamberlin Observatory**
- 20 Hanukkah
- 20-21 Dark Sky Site Weekend
- 22 Solstice; 12:04 am, MST
- 25 Christmas
- 27 Open House, 5:00 pm., Chamberlin Observatory Talk on "How to Use Your New Telescope" begins at 7:00 pm. No "Clean Up Day" beforehand.

JANUARY

- 9 General Meeting at Olin Hall, DU, beginning at 7:30. Speaker; Dr. David Grinspoon: Topic: A presentation on his new book: LONELY PLANETS: The Natural Philosophy of Alien Life
- 17-18 Dark Sky Site Weekend.
- 23 8:00 PM E- Board meeting, Chamberlin Observatory
- 24 Open House, 5:00 pm, Chamberlin Observatory

ASTRO-QUIZ Answers

A. When Galileo discovered four satellites of Jupiter in 1610, he named them Sidera Medicea (Medicean Stars) in honor of Cosimo II, a member of the powerful Medici family that ruled Florence and later Tuscany during most of the period 1434 to 1737. Cosimo II 'de Medici, grand duke of Tuscany, was Galileo's former pupil and future employer. In 1614 a German astronomer, Simon Mayr (Marius), published a work in which he claimed to have independently discovered the four Jovian moons "at almost the same time as, or somewhat sooner than Galileo first saw them in Italy." Mayr gave Jupiter's four largest satellites the names we still know them by today – Io, Europa, Ganymede, and Callisto.

AstroQuiz is contributed by Sandy Shaw.

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/\$32.95

*****\$ _____

Van Nattan Scholarship Fund *****\$ _____

Chamberlin Restoration Fund *****\$ _____

Total Amount Paid *****\$ _____

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



Denver Astronomical Society

C/o Chamberlin Observatory
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Membership Expires 1/1/2005

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