

DENVER OBSERVER

Newsletter of the Denver Astronomical Society

One Mile Nearer the Stars



Image: ©Joe Gafford, 2001

Saturn was occulted by an early morning moon on September 10, 2001.

Stalking the Brighter Game

When rifle hunting blasts into full swing October 13, planet hunting should be added to the astronomer's agenda. These bright and graceful nocturnal wanderers are major game in the celestial hunting grounds this month. September's occultation of Saturn by the moon (see photo at left) undoubtedly whet many appetites for October's planetary feast. Planet-lovers participating in Colorado Astronomy Day might do well to hone their skills. Saturn, Jupiter, and Mars should be easy targets, but how well can you capture the elusive Neptune, Uranus, and Pluto? Will you have the stamina needed to stalk Mercury?—Ed.

Colorado Astronom Da

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OCTOBER SKIES 2001

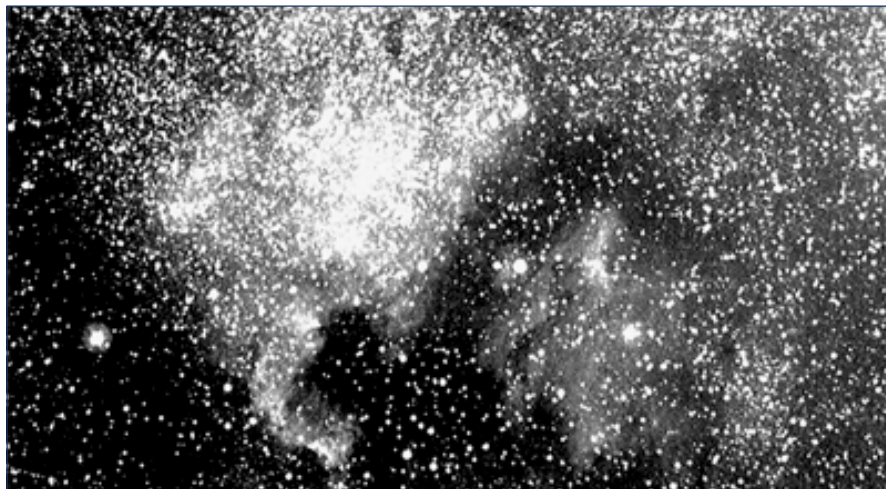
Don't you just love autumn nights? Temperatures still allow for an all-nighter, and those of you that take on that challenge get to see all the planets in the sky if you're quick behind the eyepiece. Our old friend Mars is moving swiftly eastward in the October evening sky and setting soon after midnight. Rising later in the evening is Saturn—by midnight the ringed beauty is shining high and proud. Jupiter follows Saturn by about two hours, and Venus glows brightly more than an hour ahead of sunrise. For a number of days, Mercury and Venus dance closely together and on the 29th are just more than one moon-width distant, but you'll have to fight the morning twilight. Don't forget the Orionids, and change your clocks on the 28. Oh, and Happy Halloween! Ed.

- 2 Full moon (Harvest Moon)
- 9 Last quarter moon
- 12 Mars is at Perihelion
- 16 New moon
- 21 Orion Meteor Shower Peaks
- 23 First quarter moon
- 28 Daylight Savings Time Ends



Left: Summer-time favorite M20, the Trifid Nebula (NGC 6514), in Sagittarius lies about 2500 light-years away.

Image: ©John Polhamus, 2001



PRESIDENT'S CORNER

OH MY GOSH. I saw Orion the other night. Fall is on the way. It's time for the warm weather observers to hurry up and get out there before the cold weather sets in.

Hey—all you folks who do not have a telescope, the club has a loaner. It is a Celestron 8-inch dobsonian. Members can take the scope for a month. We ask for a \$200.00



cash deposit which is fully refunded upon return of the scope in good condition. It is equipped with two eyepieces and a Telrad.®

The Library is open on Tuesday and Thursday during the

public night hours. Members are welcome to come in and browse and check out books. It can also be opened during receptions and E-board meetings. Pauline Ide has completed an inventory and it will soon be computerized.

Plans are developing for Colorado Astronomy Day. We have some great speakers, vendors, a planetarium, activities, and some great observing planned. If you want to volunteer, let Patti Kurtz know by e-mail (pkurtz@starfirecreations.com). If you want to volunteer for anything else, terrific! E-mail me and let me know what area(s) you're interested in.

I hope your skies are clear—Larry Brooks, Lbrooks100@aol.com.

- ### DAS Officers
- President:**
 Larry Brooks (303) 986-5255
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 Jack Eastman

- ### Executive Board Members
- | | |
|------------------------------|-----------------|
| Ted Cox | Jerry Sherlin |
| Jack Eastman | David Shouldice |
| Joe Gafford | Steve Solon |
| Greg Marino | Dan Wray |
| George Jones, Past President | |

DAS Information Line:
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 (303) 948-5825

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.

DAS Schedule	<h3 style="text-align: center;">OCTOBER</h3> <p>5 E-Board meeting, 8 P.M. 12-14 Dark Sky Site Weekend 19 General Meeting at Olin Hall, DU, 7:30 P.M. Speaker, Alan Stern, Southwest Research Institute, "Why a Mission to Pluto-Charon and the Kuiper Belt?" 20 Colorado Astronomy Day 27 DAS Auction (setup at 11 A.M., auction begins at 1 P.M.)</p>	<h3 style="text-align: center;">NOVEMBER</h3> <p>2 E-Board meeting, 8 P.M. 9 General Meeting at Olin Hall, DU, 7:30 P.M. Show and Tell bring something to share. 16-18 Dark Sky Site Weekend 22 Happy Thanksgiving! 24 Open House (How to Buy a Telescope)</p>
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Public Nights are held every Tuesday and Thursday from 7:00-9:00 P.M. at Chamberlin Observatory
 Costs to non-members are: \$2.00 adults, \$1.00 children
 Please call (303) 871-4333 for reservations.

Volunteers Still Needed for Colorado Astronomy Day

While progress rapidly continues for Colorado Astronomy Day, we still need a few volunteers, particularly for parking, and to operate the StarLab in the evening during the Star Party. If you choose to accept this assignment, please contact Larry Brooks at (303) 986-5255 or Patti Kurtz at (303) 948-5825. Thank you!

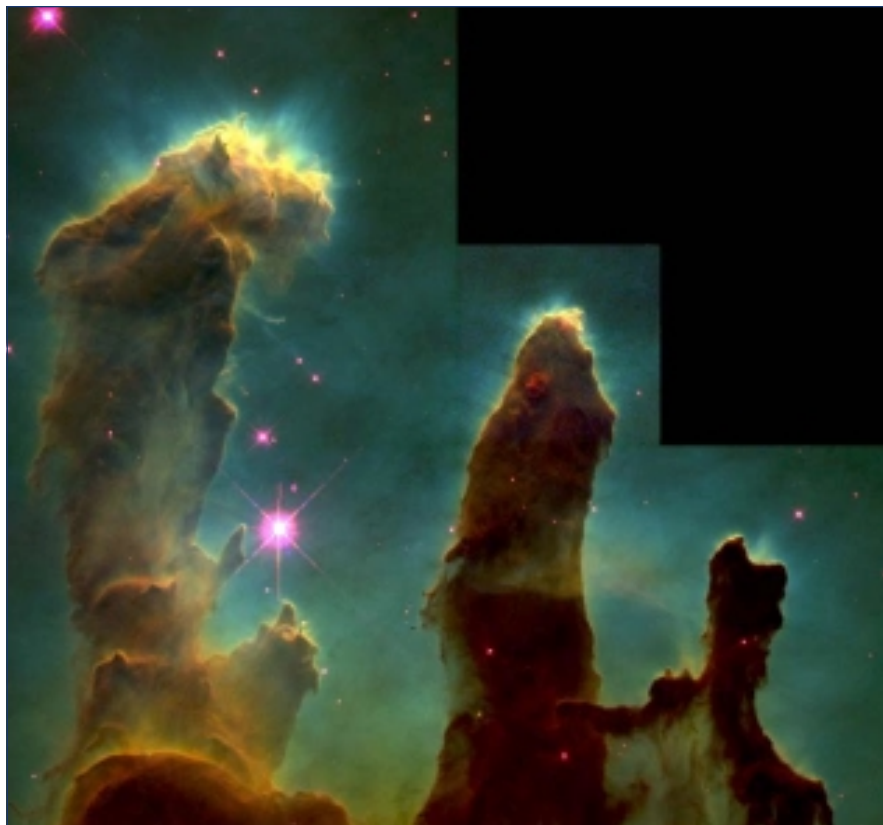
Thank you

An enormous "Thank YOU!" is in order for all DAS members who volunteered their energy and valuable time in getting Colorado Astronomy Day 2001 off the ground. Any Astronomy Day is a grand undertaking, but this year the DAS went where it has never gone before. A vice-president normally handles events and speakers. While putting this event together, the E-Board of the DAS really came through. Not one person complained, backed out, or in any way chose to not participate. Additionally, these dedicated folks are still speaking to me! In particular, the following committee leaders deserve major kudos and pats on the back—when you see them, please, please, *please* acknowledge your appreciation of them:

★**Ted Cox, Larry Brooks, and Greg Marino:** All observing aspects including telescopes for daytime solar observing and the evening star party at Chamberlin.

★**Chuck Carlson and Ron Pearson:** Managed DAS tables and all aspects of registration.

★**Joe Gafford:** When you get to the event, and know where you're going and who you're listening to, this man is the reason—he handled all signage for the event. Additionally,



The Pillars of Creation in M16, the Eagle Nebula. Imaged by the team of Jeff Hester, Colorado Astronomy Day's Keynote Speaker, this image has become something of an icon for the Hubble Space Telescope. Be sure to stay updated at www.denverastro.org (Click on Colorado Astronomy Day).

J. Hester, P. Scowen (AZ State University), and NASA Hubble Space Telescope's Wide Field Planetary Camera 2

he helped with aspects of the registration packets.

★**David Shouldice:** Single-handedly sought out and managed all door prizes.

★**Carla Schwartz:** Sought out, made arrangements with, got commitments from, and managed all vendor activity.

★**Dan Wray:** All logistics for DAS-specific sales items, such as coffee mugs, flashlights, etc. He also agreed to photograph the event.

★**Sandy Shaw:** Helped in tracking down affordable airfare during not so affordable times!

★**Steve Solon:** New member pack-

ets, and all aspects of the Orion Telescope Raffle.

★**Again, Larry Brooks:** Publicity, as well as juggling and managing the efforts and activities of the club, museum and university. Larry, you've been a terrific partner in this endeavor! Undoubtedly I've forgotten someone important. Please forgive me and understand it's only because the newsletter deadline is here, and the newsletter isn't finished yet!

It's been a privilege working this event with all of you. Thanks again.

Patti Kurtz

DAS Bookstore and More (!)

Pluto and Charon : Ice Worlds on the Ragged Edge of the Solar System was written by our October speaker, Dr. Alan Stern. Read his bio (Page 6) and be sure to come to the general meeting on October 19 to hear him speak about those icy worlds.



updates



A Jewel in the Dark—Chamberlin Observatory

Colorado Astronomy Day

The Denver Astronomical Society has brought together a stellar lineup of speakers for Colorado Astronomy Day, October 20, 2001. Four talented and innovative astronomers will present and describe theories and processes from the violent workings of our sun, new cosmological theories, mankind's attempt to reach other planets, to the evolution of our universe. *In their own words, these speakers describe their presentations:*

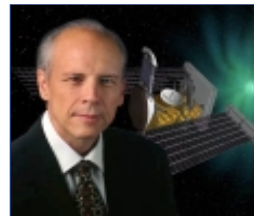
Origins: A Universe of Process and Change—John Jeffrey Hester, Ph.D. (Keynote Speaker)

“When our remote ancestors first looked at the heavens, they could not help but notice the patterns in the sky, or the ways in which those changing patterns

echoed the patterns of nature that shaped their lives. Little wonder, then, that throughout history we have sought out connections between our existence and the heavens. . . . Courtesy of wondrous tools like the Hubble Space Telescope, we now look at the sky and see revealed the spectacle of the life cycle of stars and the many other

Dr. John Jeffrey Hester

Dr. Hester uses the Hubble Space Telescope in much of his research. He may be best known outside of professional astronomy for the HST image of the Eagle Nebula, which has become something of an icon for the HST.



Dr. Benton Clark

With the Mars Odyssey spacecraft only two days from reaching its target, Dr. Clark will give us an insider's view

on why mankind continues to send missions to Mars, and what we hope to accomplish when we arrive.

processes that mark the continuing evolution of the Universe. It is ironic that in the end our investigations have brought us back to the beginning, as we answer the very questions that originally consumed our ancestors' imaginations as they stared at the sky. Our look outward has become a look inward, as we have come to understand the intimate ties that link us to the stars. We are a part of the Universe—a product of process and change.”

Mars: The Mystery Deepens—Benton C. Clark, Ph.D.

“As space exploration missions have stripped away the old myths of Mars, new discoveries have led from one paradigm to another. Mars is a cold, rocky desert but the evidence is mounting that it once was truly wet, with rivers, lakes and perhaps an ocean. Even today, there may be seeps of liquid water, and the search continues to discover active volcanoes and perhaps geysers. The question of life is still an open one, but even before we conclusively find life in some oasis on Mars, or its ancient remains, we will bring life to the red planet, when human exploration begins.”

The New Cosmology—Erica Ellingson, Ph.D.

“The birth of modern cosmology was marked by the discovery of the expanding universe by Edwin Hubble in the early 1930's. Albert Einstein's ideas about the properties of space and time helped formulate our understanding of the universe as a whole. From these discoveries came the standard Big Bang model for the creation and evolution of the universe. Our discussion of cosmology will begin with an introduction to the Big Bang model and a review of efforts to test and refine this standard picture of cosmic evolution. However, the past several years have brought stunning new results, which

colorado astronomy day



Dr. Erica Ellingson

What happens to the unfortunate galaxies that fall into a galaxy cluster? Dr. Ellingson uses some impressive telescopes to make her observations while searching for data and information on the evolution of galaxies and quasars.

challenge this standard model. We'll discuss these surprising events and how they will force us to revise our understanding of the universe in the birth of a new cosmology."

Space Weather: Why Should We Care?—JoAnn Joselyn, Ph.D.

"Space Weather' is a term meant to describe fluctuations in the natural environment of Earth caused by disturbances originating at the sun and propagating outward through the interplanetary medium. Examples of poor space weather include active auroral patterns, unusual conditions for radio propagation, harmful swarms of electrons that can confuse

Dr. JoAnn Joselyn



In its 81-year history, the International Union of Geodesy and Geophysics has never had a woman in the position of Secretary General. While this and her credentials are impressive, Dr. Joselyn's presentations may be even more so—she makes the sun come alive for her audience.

or even destroy communication satellite systems, and bursts of very high energy radiation from the sun that can deliver unacceptable doses of radiation to astronauts and satellite components. Another important consequence of severe fluctuations in Earth's magnetic field are induced bias currents in power utility transformers that have caused blackouts over large regions of North America. Experience gained over the past 50 years has shown that as technology has become ever more refined, vulnerability to space weather has increased. Space weather alerts, reports and forecasts are becoming as critical to some specialized industries as regular weather services are to agriculture."

Colorado Astronomy Day Schedule of Events

MORNING

- 7-8:30** **Vendor and Solar Telescopes Setup** (Olin Hall and sidewalk outside Boettcher Center. In the event of rain or snow, vendors will be in Olin Hall)
- 8:30** **Doors Open—Registration Begins** (Boettcher Center)
- 10:00** **Welcome and Introduction**
- 10:15-11:15** **"Mars—The Mystery Deepens," Dr. Benton Clark**, Lockheed Martin, Mars Odyssey Mission Team
- 11:45-12:45** **"Space Weather—Why Do We Care?" Dr. JoAnn C. Joselyn**, Secretary General, International Union of Geodesy and Geophysics

AFTERNOON

- 12:45-1:45** **Lunch Break**
- 1:45-2:45** **"The New Cosmology," Dr. Erica Ellingson**, University of Colorado, Dept. of Astrophysical and Planetary Sciences
- 2:45-3:30** **Break**

3:30-5:00 KEYNOTE SPEAKER:

"Origins: A Universe of Process and Change," Dr. Jeffrey Hester, Arizona State University, Hubble Space Telescope Science Team

Closing

5:00-7:00 Dinner Break

EVENING AT

★CHAMBERLIN OBSERVATORY★

- 7:00** **★Star Party** (Weather permitting) View the moon, planets, star clusters, galaxies, nebulae, and more!
- ★Experience the StarLab Planetarium**
- ★Stroll through the many available displays** including stellar photos, meteorites, and childrens' books.
- ★Kids!** Make your own constellation finders.
- ★Free star maps** (while supplies last).

EVENTS AT

The Denver Museum of Nature & Science

Begins at Noon

- ★Meteorite Touch Carts
- ★Science Demonstrations
- ★Solar Observing
- ★All-Sky Camera
- ★Dinosaur Extinction Display

Advance Registration Form

Registration begins at 8:30 A.M. Check-in at the registration table for your name badge (you'll need this to access the talks), door prize ticket, and information packet. Seating is limited to only 380 people—pre-registration guarantees you a seat.

Registration cost is \$10.00 Adults, \$8.00 Students, and includes all four speakers.

Door Prize Drawings will be held between speakers. Winners must be present during the drawings to win. Sorry—no refunds.

Names you are registering (Please print clearly): _____

Address: _____

E-mail address (we'll confirm your registration via e-mail): _____

Number of registrations: _____ Adults _____ Students

Total amount enclosed: \$ _____

Please mail registration form and checks (no cash) payable to the Denver Astronomical Society (or DAS) to: Chuck Carlson, DAS Treasurer, 1521 So. Vine Street, Denver, CO 80210.

For more information, stay posted at www.denverastro.org

colorado astronomy day

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-25 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.



Image: Photographer unknown
Among his numerous talents, Dr. Alan Stern is an instrument-rated commercial pilot and flight instructor.

Astronomer's Vision Extends to the Edge

Dr. Alan Stern has a long reach.

A versatile astronomer, his research includes Kuiper Belt Objects (KBOs), the Oort cloud, comets, the outer solar system, Pluto, planetary satellites, and asteroids.

Stern, a planetary scientist and astrophysicist, is the Director of the

Southwest Research Institute's Department of Space Studies in Boulder, Colorado. Among his many projects and activities, he is the Principal Investigator of the miniaturized HIPPS Pluto breadboard camera/IR spectrometer/UV spectrometer payload proposed for the NASA/Pluto-Kuiper Express mission.

Stern is also a prolific author—he has written more than 130 technical papers, many popular articles, and two books including *The U.S. Space Program After Challenger* published by Franklin-Watts in 1987, and *Pluto & Charon: Ice Worlds on the Ragged Edge of the Solar System* published by John Wiley & Sons in 1997.

The Denver Astronomical Society looks forward to hearing about Dr. Stern's work on the mission to Pluto-Charon and the Kuiper Belt at the next general membership meeting October 19, 2001. Members interested in purchasing his books can check out the DAS Bookstore and More(!) from the DAS website. *Patti A. Kurtz*

Dark Sky Site Guidelines

The Dark Sky Site (DSS) is for the use of DAS members and their guests. If you are neither, please contact an officer of the DAS for a guest pass, and read the DSS Guest Policy (below). Please remember that any light disrupts your eye's dark adaptation and can ruin astrophotography. Most members (astrophotographers may be the exception) are happy to share views from their telescopes, however, please introduce yourself and ask permission upon approaching a telescope owner. Please follow these simple guidelines to maintain a positive experience for everyone:

- ★ Try to arrive before dark. If you must arrive after dark, please turn off headlights when turning into the site, and try to arrive from the north.
- ★ Don't park on the graded graveled roads.
- ★ Turn off or disable all dome and trunk lights in your car (or cover with layered red tape or duct tape)
- ★ Use only dull RED FLASHLIGHTS.
- ★ NO OPEN or CHARCOAL FIRES.
- ★ If you're the last person to leave, close the gate.
- ★ If you leave before everyone else, ask for assistance in getting out of the site without headlights.

Other suggestions:

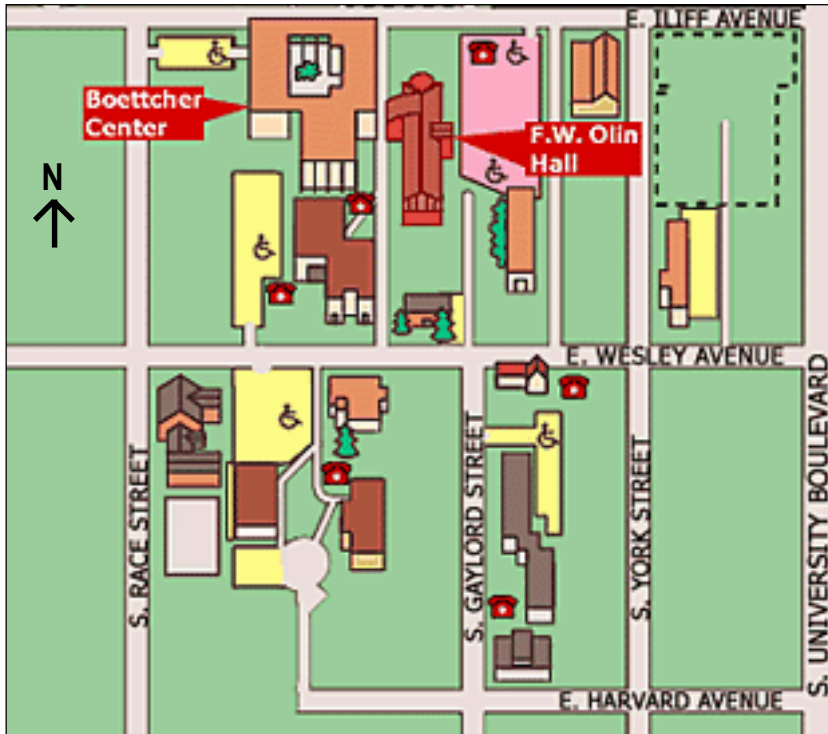
- ★ Wear warm clothing.
- ★ Bring your own toilet paper in case that in the porta-pottie has run out.

DARK SKY SITE GUEST POLICY

The DAS Dark Sky Site, while for the exclusive use of the membership for serious observing, will allow visitors on a limited basis. Groups or classes wishing to use the DSS may do so only with prior arrangement through the DAS president or vice president.

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

Colorado Astronomical Society Map of D.U.'s Boettcher Center and Olin Halls



General Meeting Parking

The University of Denver has raised its parking lot fees to \$4.00. The Physics and Astronomy department will subsidize \$1.50, making our cost \$2.50/vehicle to park in the "O" lot during meetings. However, you can park on the street to the south of Olin Hall (Wesley) for free, and perhaps find a place on Cliff, although it's more restrictive.

DAS Members Contribute Images

As usual, members photograph different events, both terrestrial and celestial, and contribute them to the increasing archive the newsletter editor keeps for publication in *The Denver Observer*. At far right, from top to bottom are: **Comet Hale-Bopp and M34** (an open star cluster in Perseus) during the comet's 1997 apparition (Ron Pearson); **Members prepare for a public Open House** (John Flemming); **The Whirlpool Galaxy**, a spiral Galaxy (M51) in Canes Venatici (Kiowa Observatory); and **Kurt Vander Horst** of Starlight Adventures, with his 30-inch Obsession telescope at Rocky Mountain Star Stare 2001 (Ron Pearson).

Welcome New Members!

The following folks have recently joined the Denver Astronomical Society. Welcome!

- | | |
|------------------|--------------------|
| •Craig Anderson | •Roy Makrucki |
| •Jan Marie Belle | •Doug Nogami |
| •Stan Burns | •Glen Nogami |
| •Glenn Frank | •Mary Nogami |
| •Janet Freeman | •Carol Price |
| •Mark Hoefler | •Brad Taggart |
| •Lynn Iwaniec | •Franklin Van Kirk |
| •Danielle Link | •Louis Williamson |

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Photographer: © Unknown 2001

short takes

About the Denver Astronomical Societ

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?	
Yes <input type="checkbox"/>	No <input type="checkbox"/>
Do you want the above information excluded from the yearly roster? Yes <input type="checkbox"/> No <input type="checkbox"/>	
<i>Please Circle All That Apply:</i>	
Regular Membership: \$30 Associate: \$10 (Age 22 and younger)	
..... \$ _____	
Astronomy Magazine/\$29	
Sky & Telescope Magazine/\$29.95	
..... \$ _____	
Dark Sky Site Fund Donation \$ _____	
Van Nattan Scholarship Fund \$ _____	
Chamberlin Restoration Fund \$ _____	
Total Amount Paid \$ _____	
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 Societ

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

OCTOBER'S SPEAKER:

**Dr. Alan Stern, Southwest
Research Institute,**
*"Why a Mission to Pluto-
Charon and the Kuiper
Belt?" See Page 6.*

★ *The Denver Astronomical Society extends its deepest sympathies to those affected by the tragic events on September 11. May our leaders be guided by wisdom and forethought to achieve a swift and lasting solution to terrorism.* ★

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