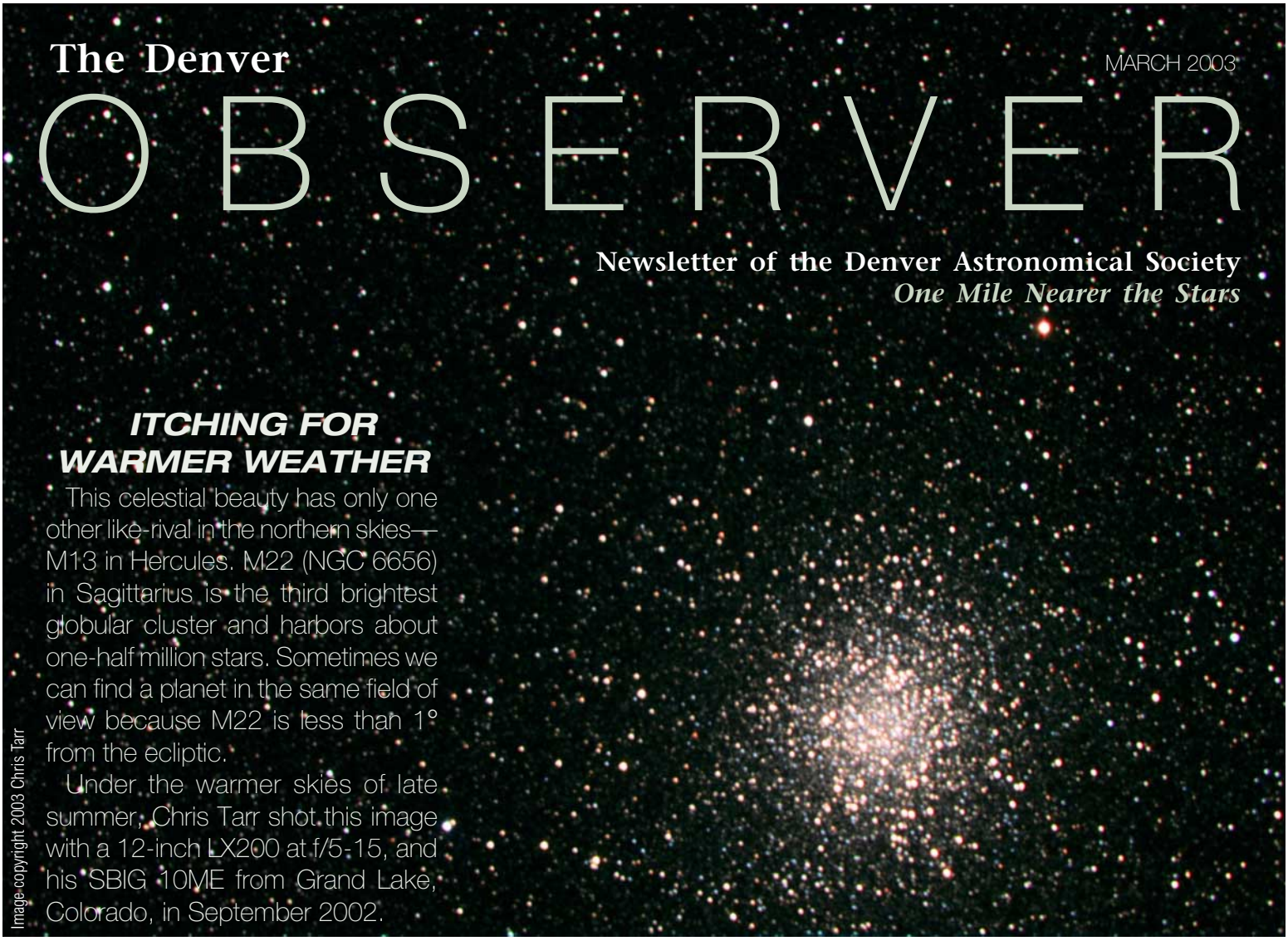
The Denver
OBSERVER
MARCH 2003
Newsletter of the Denver Astronomical Society
One Mile Nearer the Stars



ITCHING FOR WARMER WEATHER

This celestial beauty has only one other like-rival in the northern skies—M13 in Hercules. M22 (NGC 6656) in Sagittarius is the third brightest globular cluster and harbors about one-half million stars. Sometimes we can find a planet in the same field of view because M22 is less than 1° from the ecliptic.

Under the warmer skies of late summer, Chris Tarr shot this image with a 12-inch LX200 at f/5-15, and his SBIG 10ME from Grand Lake, Colorado, in September 2002.

Dude. Do the Moon-Dance.

Inside The Observer

MARCH SKIES 2003

While it's true that March generally shovels up the most snow and/or rain of the year, if the skies are clear, our planetary neighbors will give us quite a show. Additionally, asteroid **Vesta** shines at magnitude 5.9 (naked-eye), and if you know where to look it won't even require dark-adaptation to see! Warmer weather types are undoubtedly grateful as the sun is setting later, but when the skies darken, Jupiter and Saturn glitter high and bright: this is good news for planetary observers. **Jupiter** will approach Cancer's Beehive (M44) while **Saturn** ornaments the horns of Taurus the Bull.

2 ..... New moon,
11 ..... First quarter moon
18 ..... Full moon
20 ..... Vernal Equinox (6:00 P.M.)
24 ..... Last quarter moon,
..... Callisto eclipses Europa

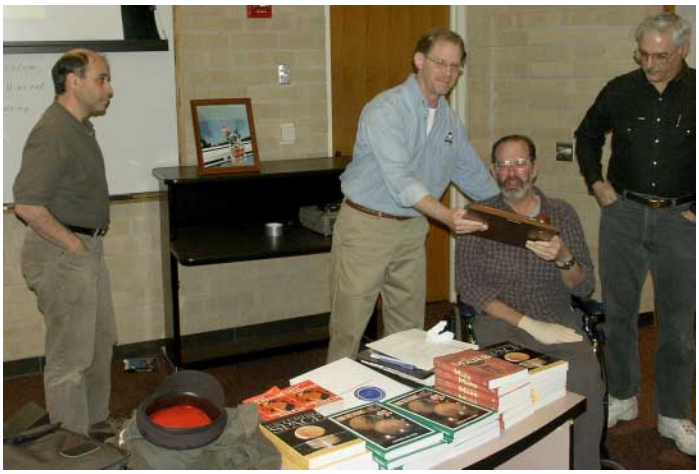
Jovian moon-dancing is going strong on March 2-3 as Io occults Europa twice in the night: first at 11:47 P.M. and next at 12:46 A.M. Later in the month, an off-planet eclipse occurs on March 24 beginning at 9:13 P.M. when Europa is eclipsed by Callisto in an annular eclipse. All of the Jovian "mutual events" are listed on *S&T's* website *(www.skyandtelescope.com)*. Check them out: if you don't already own a scope, this might be the perfect excuse to buy one!

You'll need it or someone else's scope to see very much on **Mars** which rises a few hours ahead of dawn. It will brighten appreciably by the end of April, however, so stay tuned to the warrior planet.

I hope your observing is grand this month, and **Happy St. Patrick's Day.**—*Patti Kurtz*

PRESIDENT'S CORNER

Larry Brooks named President Emeritus



Larry Brooks is named President Emeritus at the February General Meeting. From left to right: Dr. Robert Zubrin, Steve Solon, Larry Brooks, and Dan Wray.

Image: © Joe Gafford 2003

In honor of his dedicated service and steadfast commitment to the DAS, the E-board has unanimously voted Larry Brooks as President Emeritus. Larry joined the DAS in 1990 and served as President in 1993-94 and continuously since 1999. In addition, he served as an e-board member in 1991-92, 1995-97 and as Vice President in 1998.

Under his leadership, the membership of the DAS has increased from 167 members in 1993 to over 350 today. He has worked tirelessly to promote astronomy to those who had little knowledge, inspired novices who showed more than a passing interest and encouraged those already hooked to become more active. Throughout the years he has taught numerous classes at the Denver Museum of Nature and Science and has worked at S&S Optika. Larry also belongs to the Colorado Grotto, Rocky Mountain Stereo Camera Club and Colorado Meteorite Society. His circle of friends is large and the love they share for him even greater. Larry, we all sincerely thank you for leading us into the future.—*Carla Swartz*

DAS Schedule

MARCH

1-2 Dark Sky Site Weekend
7 E-Board meeting, 8 P.M.
8 ***Clean-up Day*** *(4:00 P.M.)* and ***Open House*** *(the Open House begins at dusk.)*
17 St. Patrick's Day
22 Spring Banquet 6:30 P.M.—Speaker: Dr. Roger Clark (DAS), *"Imaging Spectroscopy: Earth and Planetary Remote Sensing and Development of the First Generation 'Tricorders.'"*

APRIL

29-30 **(March)** *Dark Sky Site Weekend*
4 E-Board meeting, 8 P.M.
5 ***Clean-up Day*** *(4:00 P.M.)* and ***Open House*** *(the Open House begins at dusk.)*
11 General Meeting at Olin Hall, DU, 7:30 P.M.—Speaker: Patrick S. McIntosh (Helio Synoptics), *"Solar Cartography and Long-Range Predictions."*
27-May 3 Texas Star Party

Public nights are held every Tuesday and Thursday evenings beginning at the following times: October 1 - March 31 at 7:00 P.M.
April 1 - September 30 at 8:30 P.M. at Chamberlin Observatory
Costs to non-members are: $3.00 adults, $2.00 children.
Please call (303) 281-9052 for reservations.

DAS Officers

President:
Larry Brooks
Vice President and Acting President:
Carla Swartz (303) 246-6926
Email: CSastrogirl@aol.com
Secretary:
Ron Pearson (303) 670-1299
Email: rpearson@ecentral.com
Treasurer:
Chuck Carlson (303) 744-7331
Email: chcarlso@du.edu
ALCor:
Jerry Sherlin (303) 680-6894
Email: SHERLINJ@aol.com
Chief Observer:
Jack Eastman

Executive Board Members

Ted Cox — Sandy Shaw
Jack Eastman — David Shouldice
Joe Gafford — Steve Solon
Patti Kurtz — Dan Wray
George Jones, Past President

DAS Information Line:
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StarFire Creations Unlimited
(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.

www.denverastrosociety.org

NASA's Space Place

Seven Strangers?

by Tony Phillips

At the dawn of the space age some 40 years ago, we always knew who was orbiting Earth or flying to the Moon. Neil Armstrong, Yuri Gagarin, John Glenn. They were household names—everywhere.

Lately it's different. Space flight has become more routine. Another flight of the shuttle. Another visit to the space station. Who's onboard this time? Unless you're a NASA employee or a serious space enthusiast, you might not know.

Dave Brown, Rick Husband, Laurel Clark, Kalpana Chawla, Michael Anderson, William McCool, and Ilan Ramon.

Now we know. Those are the names of the seven astronauts who were tragically lost on Saturday, Feb. 1st, when the space shuttle Columbia (STS-107) broke apart over Texas.

Before the accident, perhaps, they were strangers to you. But if that's so, why did you have a knot in your gut when you heard the news? What were those tears all about? Why do you feel so deep-down sad for seven strangers?

Astronauts have an unaccountable hold on us. They are explorers. Curious, humorous, serious, daring, careful. Where they go, they go in peace. Every kid wants to be one. Astronauts are the essence of humanity.

They are not strangers. They are us.

While still in orbit Dave Brown asked, jokingly, "do we really have to come back?"

No. But we wish you had.

Please see the NASA Home Page *(http://www.nasa.gov)* for more information on the Columbia Investigation.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

The Columbia (STS-107) crew (above) and their memorial (below), photographed by Joe Gafford at Kennedy Space Center, the day after they didn't return.

Election Results

President — Carla Swartz
Vice President — Rich Lane
Secretary — Ron Pearson
Treasurer — Chuck Carlson

E-Board:

Jack Eastman
Joe Gafford
Ivan Geisler
Ron Mickle
Bill Ormsby
Sandy Shaw
David Shouldice
Steve Solon

Note from the editor:

Thanks to **Carla Swartz** who wrote this month's President's Corner and to **Lisa Judd** for her delightful article.

Newsletter contributions (ccd and film astrophotos, members with telescopes, star party candids, short observing anecdotes, observing and imaging tips, etc.) are welcome and encouraged. This is your chance to strut your stuff! **Please call or email me for submission instructions.**

***Patti Kurtz*
(303) 948-5825

***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 (chcarlso@du.edu). See the back page of this newsletter for more information.*

updates

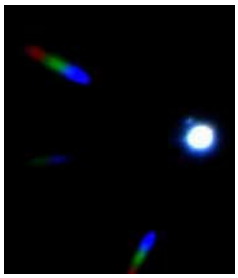
A New Look at an Old Friend

by Lisa Judd

M42, The Great Orion Nebula

One thing that always surprises me about this hobby is that there's always something new, even if it's just a new look at an old target. In fact, even the first targets ever observed, back in the days from before you knew the constellations, can never fail to amaze when revisited for the umpteenth time, as long as we never look at the same aspect of it. Last week's "new" discovery was that same old Orion nebula, and the object of my new excitement are the double star pairs within it. I've no doubt that many in DAS have done the stellar aspect as well as mapping out the arms and batwings and all the other various parts of the same nebula, but if you're somewhat new to the hobby and are reading this — or otherwise never noticed the star pairs — then I highly recommend getting a gander at these things before winter's over.

The nudging factor in examining this particular aspect of M42 was in furtherance of the AL's double-star observing list (Sandy just finished these, so please congratulate her; I'm still over a dozen from the top). Upon first looking at the positions given it felt intimidating - the cold front was due to come through in a couple of hours and I was starting to really tire in the feet, back and bones as Orion began to set into the city's light pollution, so it would've been easy to make excuses and go in.

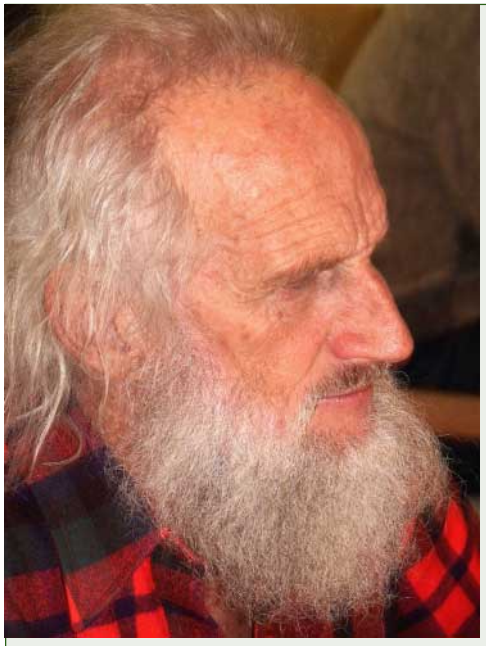


Rigel's Companion

I thought of how many swarms of stars were peppered througout all four components of the sword and thought that picking out the doubles from them would be as difficult as measuring RA and Dec across a large star map down to the minutes and seconds. But, as the familiar "just this one more" syndrome set in, everything fell into place as easy as pie. Didn't our mothers tell us not to groan about something until after we've tried it?

So for those that haven't been through this before, there are three pairs of easy, colorful, obvious doubles in the sword and the one easy, colorful and tight quadruple that we all know about. I had always meant to look at the Trapezium in detail and wondered what kind of magnification or sky conditions I might need, but as it happens it was plenty easy to see the distinct components (and their colors!!) at regular low magnification in a 3.5-inch scope in halfway decent observing conditions, and high power separated them out even further. The brightest one was clearly banana-yellow, with the two next brightest ones distinctly white and blue, and the dim one making the "flat" edge had an interesting purple hue. (I often get into arguments about blue vs. purple, so if you've done this before and your observing log says something quite different, more power to ya. I prefer purple anyway.)

I learned that the generally accepted name for the Trapezium is Theta 1 Orionis, which begs looking at Theta 2 Orionis in the same field and swimming deep in the same nebula, just as obviously a double-star system. The pair is much wider than the tight little Trap with a similarly white-yellow primary, but what interested me was that the secondary looked green. Stellar physicists tell us that there are no green stars - I forget why - but, like modern planetary science, Zubenelgenubi in Libra and Antares' little companion may test our understanding of the rules of just how



Jack Eastman,Winner of the G. Bruce Blair Award

Amateur Astronomers presents The G. Bruce Blair Award for 2003 to Jack Eastman

Congratulations Jack, on this astronomical achievement!

The Western Amateur Astronomers organization, founded in 1949, is comprised of seventeen astronomical societies throughout the western United States. Promoting, educating and encouraging interest in astronomy are just a few of the goals of the WAA, which also serves as a liaison between various astronomical groups and organizes an annual convention. The initial meeting was held at the Mt. Wilson Observatory and chaired by Dr. G. Bruce Blair, University of Nevada, who unfortunately passed soon thereafter. It is in his name that the award is given to those who have made outstanding contributions to amateur astronomy.

Jack is a long-standing member of the DAS. He has served as DAS president and is currently an e-board member and the Chief Observer. He has been an active advisor for work on Chamberlin's 20-inch Alvan Clark refractor and was appointed to the board dedicated to the observatory's restoration. While in college, he lectured at the Griffith Observatory and continues as a member of the Los Angeles Astronomical Society, in which he served as LAAS president and board member. He ranks high as an ambassador to astronomy for amateurs.

Jack Eastman is a strong advocate for joining, and supporting national astronomy programs. It is through this substantial effort, and participation as an astronomer that the Western Amateur Astronomers are pleased to award Mr. F. Jack Eastman, The G. Bruce Blair Award, for 2003.—*Carla Swartz*

much nature will allow. Seeing this particular green star got me wondering if the gas in the nebula might be affecting what we see, as it is plenty possible to have green nebula gas. So now I have to look up whether the nebula is in front of Theta 2 or if the double's embedded, or if it's a perception trick like so many other doubles where the hue of the primary greatly influences the color we see in the secondary, nudging our retinal cones towards the compliment color.

If it's ever possible to tear ourselves away from these beauties or from other parts of the nebula, the next two pairs, Iota Orionis and Struve 747, are also easy in the bottom star of the sword. Iota is the bright one that you see naked eye after pointing out to the neighbors how fuzzy the middle one is, and although harder than the Thetas, high power will show that it's got a clear companion. Like the adventure just had one field above, Struve 747 is in the same field and makes a nice little pair of headlights coming at you from a very far distance. Unlike the ones that appear gas-colored, these two are an equally pretty exercise in white on a black background. So, if you think you've mapped out every detail of the familiar sword and know it like the back of your hand, never get complacent - perhaps STScI would never have pointed Hubble in that direction and found proplyds if we all thought like that. The great nebula is more than just one single, novice discovery that a nebula can be a naked-eye object — it's a neverending discovery in any piece of glass.—*Lisa Judd*

observers deck

Directions to the E.G. Kline Dark Site

The DAS Edmund G. Kline Dark Site 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 the site 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.**

Joe Gafford made some camera-time at the Winter Star Party in February. The Eta Carina Nebula (NGC 3372), too far south for us northern observers, is one of the most beautiful objects in the southern skies.

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:

★ 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.

★ 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.

edmund g. kline dark site

Saturn

This single frame from a Quicktime movie was made with a 12.5-inch f/15 telescope and a Vesta Pro Webcam on January 7, 2003. © Ron Pearson 2003

Desert Sunset Star Party - May 1-4, 2003

Registration is now online for the Desert Sunset Star Party. Please check our website *(http://chartmarker.tripod.com sunset.htm)* for details about this new star party and to get your registration forms. We have speakers who will talk on a variety of subjects such as identifying stars, supernovae, Mars and the weather in the Southwest. We will have vendors present and door prizes, and a contest for the best Simple Astronomy Tool (SAT). We also have lots to do during the day and have scheduled tours to Mt. Hopkins (Whipple Observatory), BioSphere 2, and the Univ of AZ Mirror Lab. Catered meals will also be available. If you do not have web access, please contact a club member to get the forms. We hope you will be able to join us.

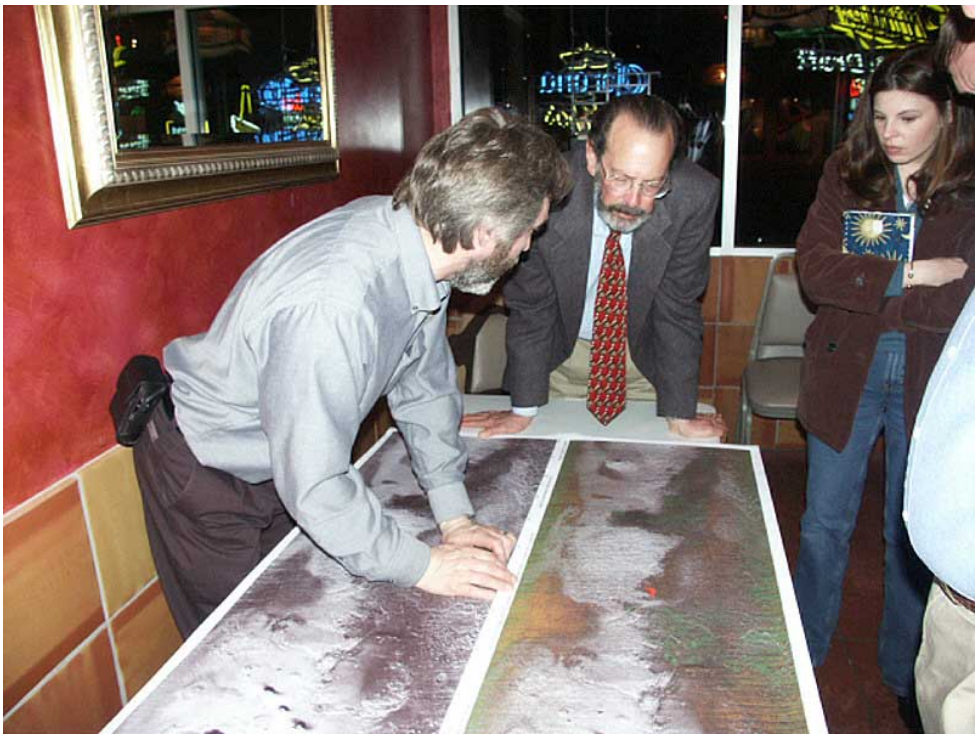
Chart Markers and More
Pat and Arleen Heimann
http://chartmarker.tripod.com

Annual Spring Banquet

Saturday, March 22, 2003

The White Fence Farm *(6263 West Jewell, Lakewood, CO 80232, 303-935-5945)* will cook up a delicious meal for the DAS Spring Banquet on Saturday, March 22. We will have cocktails from 6:30-7:00P.M., dinner at 7:00, and a presentation from Dr. Roger Clark to follow. Dr. Clark's talk is entitled, *"Imaging Spectroscopy: Earth and Planetary Remote Sensingand Development of the First Generation 'Tricorders.'"* The buffet will include White Fence Farm chicken, baked potatoes, various salads and cole slaws, corn fritters, and last but not least, sundaes for desert.

Reservations are limited and must be paid in advance. Dinner will cost $20/person. **Please make checks payable to the Denver Astronomical Society and mail to Steve Solon, 9774 West Elmhurst Place, Littleton, CO 80128 by March 8.** Hope you can join us for our spring celebration and the installation of new officers.



Last year's Spring Banquet served up a terrific talk from Roger Clark about his work on different Mars projects. This year's presentation is entitled, *"Imaging Spectroscopy: Earth and Planetary Remote Sensingand Development of the First Generation 'Tricorders.'"* Above from left to right: Dr. Roger Clark, Larry Brooks, and Carla Swartz.

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/$29.95 ..... $_____

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
2930 East Warren Avenue
Denver, Colorado 80208

March's Meeting
March 22:

Annual Spring Banquet and Installation of Officers at the White Fence Farm (See Page 7.)—Speaker: Dr. Roger Clark (DAS), *"Imaging Spectroscopy: Earth and Planetary Remote Sensing and Development of the First Generation 'Tricorders.'"*

j o i n u s