

STAR GAZER NEWS

NEWSLETTER OF THE DELMARVA STARGAZERS

April 2002

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At the March Meeting Don Surles brought the meeting to order at 7:15 with 25 members and guests attending.

2nd Annual Mid Atlantic Mirror Making Seminar- was very successful in spite of the last minute delivery of the filters for the Solar Prominence scopes. Also quite popular was the web cam construction project demonstrated by Doug Miller and Tom Pomponio.

Doug modified a web cam, by replacing the lens with a 1¹/₄" tube from a 35mm film canister. Tom modified a higher resolution Phillips Vesta Pro web cam to give exposures up to 10 seconds for deep space objects.



A Thank You - "The Cooks" want to thank everyone for the beautiful flowers presented to us by the "Grinders" and "Scope Makers" at the Mirror Making Seminar. You were a hungry bunch! We enjoyed cooking for you and feeding the weary. After two days of grinding, some of you got very weary! Again, thanks so much! Gina, Kathy, Cheri and Karen

Constellation of the Month: Lynx (LINKS)

This constellation was covered by Ron Zink. Not mapped or named until 1690, there was no mythology and as it turns out very little astronomy, at least for the amateur. There is only one 3rd magnitude star and the only deep space objects are NGC2419, a very faint globular cluster at a distance of 200,000 light years and NGC2683, a 10th magnitude spiral galaxy. Hevelius named it *lynx*, saying: "you have to have the eyes of a lynx to find it." Of possible interest to amateurs was a list of objects Ron downloaded from the web which included 27 double stars.

Program: Telescope Pointing Aids

This was a member effort with many points of view

and lots of useful tips. The pointing aids included techniques as well as hardware. The program began with members citing their preferred pointing aids and then developed into meaningful dialogues on the pro and cons on this or that device. Oddly enough, the small finder scope did very poorly whereas the Telrad fared very well. To organize this subject for discussion, I divided the pointing aids into the following broad categories: Finder Scopes, Non-magnifying devices, and Polar Alignment.

Finder Scopes The 6X30 finders, that are standard with new telescopes, were thought by most members to be optically inferior and usually too close to the main tube, to permit freedom of action. To solve the latter problem, Don Surles built a metal /PVC bracket

Monthly Meeting Tuesday, April 2

TELESCOPE MOUNTS

Don Surles and others

7:00 p.m. First Presbyterian Church, Smyrna

that extends the distance of the finder from the main scope. Some people use a combination of things. Tim Millegan will often start with a Telrad and when he gets anywhere near his target, will switch to a short tube 80 mm refractor with a star diagonal that both erects the image and gives him a 4-5 degree field. He can then go from there into a star hopping mode. Don recommended a finder which also gives both the wide field feature and the erect image. It was a finder which he had constructed from one half of a 7 X 50 pair of Binoculars.

Non-Magnifying Aids This group includes any lens free sighting device and could range from a simple peep sight to the illuminated Telrad, Rigel and Daisy type. All of these have the advantage over finder scopes in being free from image reversal. The Telrad is probably the most popular with its 3 reticle sizes and a dimmer rheostat and optional pulser for very faint targets. The Rigel is a smaller, lighter Telrad type, which was judged by those who had used it, as requiring adjustment more frequently.

The Daisy Type was originally used on BB guns and had a very bright red light. A modified version is now marketed by the scope makers (Orion's *EZ Finder*). The modified device projects a *variable* intensity red

dot on the sky.

Polar Alignment GO-TO , GPS and computer dependent systems were not included in this evaluation. The most common method in this category is polar alignment with setting circles (those cute circular dials with the numbers). For quick polar alignment, first set your latitude. Then with a compass, aim your polar axis to the North. Many equatorial mounts like the Great Polaris have telescopes built into the RA axis to find Polaris. The yoke mounted SCGs are a natural for polar alignment; set your declination for 89.2° (approx North Pole). To

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get your alignment right on the button, use a correcting template. Templates are often provided to correct for the difference between Polaris and the true north pole. Once you are polar aligned, you simply adjust your setting circles to the coordinates of the objects you wish to find. If you want the ring nebula (M57), set your R.A. to 18h 53m and declination to +33°. The Observer's Handbook is a good source for many of these coordinates.

From the President's Desk...

March 16, 2002

We made IT happen! IT was a success! And we had fun doing IT! Yes, the 2nd Mid-Atlantic Mirror Makers Weekend is now history. We made mirrors and prominence-viewing scopes, hacked a few web cameras, ate tons of good food, made some new friends and renewed some existing friendships. We did it with an ease and air of confidence that comes from experience. Delmarva Star Gazers can be proud of this event that brought 55-60 people together for a weekend of amateur astronomy and sharing of knowledge about our hobby. Thanks to all who participated and contributed their time and talents to make this weekend a huge success. I feel very confident that there will be a repeat in 2003. Making it happen... The people who make it happen are the key to Delmarva Star Gazers' success. Although volunteering one's time and expertise for a common goal can be difficult, it can also be very rewarding. Without the people who make it happen for Delmarva Star Gazers there would be no monthly meetings, no newsletter, no website, no monthly observing, no Star Gaze I-VIII, no No Frills I-VII, no

Mid Atlantic Mirror Makers Weekends, and no one bringing hands-on astronomy to children. We make things happen! I am so proud of this organization and the people who have made AMATEUR ASTRONOMY happen for nine years. Let's commit ourselves to another nine and make each one better than the previous.

The Future? Well, it will be what we make of it. Amateur astronomy is experiencing constant change and we should expand our knowledge of these changes so that we can embrace the opportunities for improvements as they become available and fit our needs. There are opportunities for each of us to contribute to our organization. Delmarva Star Gazers needs each one of us to do our best for the hobby. What is our hobby about? Certainly there is the equipment: scopes, binos, eyepieces, mounts, atlases, cameras, film, computers, and more new "just have to have stuff" coming every day. There is the constantly changing sky: planets, the moon, comets, asteroids, nebulae, galaxies, weather events always changing. There is the challenge of "rolling your own"; amateur astronomers are scroungers and delight in making their own instruments to their specifications. There is a great satisfaction that comes from using a quality piece of equipment created from one's own ideas and handiwork. Another element of amateur astronomy is the feeling of getting away from the day-to-day grind to look at the sky and hear Mother Nature's chorus of night sounds. All of this is important to amateur astronomy. But the most important part is the camaraderie experienced in our meetings. We are so fortunate to have attracted a population of folks who find it very easy to tolerate each other. I think it has to do with the "amateur" status. There are no levels of "rank" when we meet on the observing field. We are all simply amateurs. Each of us enjoys the company of our fellow amateurs and none of us is pushing a hidden agenda. There are no hidden messages to be deciphered. No one will receive a reprimand for asking a "long time" amateur a basic question. There is no room for sarcasm in amateur astronomy. We enjoy the company of each other and the challenge of improving our hobby. We make our hobby enjoyable. Amateur astronomy is growing at a phenomenal rate today. Delmarva Star Gazers are doing our share by promoting events where AA's can assemble and enjoy the company of each other. Keep up the good work! Did you enjoy Winter? I hope so because it is past and we now have a glorious Spring awaiting. Along with flowers, warm temperatures, greening forests (watch the swamps; they green up first), freshly

plowed fields, newly mowed lawns, birds singing in the morning, and fast moving weather fronts comes the opportunity to observe the realm of springtime galaxies. And, our Delmarva Stargaze VIII will commence April 10 at Tuckahoe State Park. The event will run from Wednesday through Sunday morning. Please put it on your schedule; there should be something for every amateur astronomer. We have a visitor to our solar system neighborhood: Comet Ilkeya-Zhang is ascending the westward sky after sunset. It is a beautiful long-tailed naked eye comet. A binocular easily shows detail in the long streaming dust and gas tails. Look for an ephemeris on *Spaceweather.com*. This comet will reach perihelion March 18 and will be visible for a couple of months. But it will be at it's best around perihelion. Don't miss it! So much for this month's comments; we have work to do. Star Gaze VIII planning must have final touches. See you at the Church or at Tuckahoe. Get ready cause Spring is here and we are going star gazing.

Don...

The Editor's Quadrant...

Improved Newsletter Images: Keith Lohmeyer recently bought Adobe Acrobat to create PDF files for the Stargazer web page. The original intent here was to produce printable and downloadable documents for online users. What we didn't realize at the time was that pdf documents can be printed electronically. That is to say, we can completely avoid the scanning copying stage which behaves as an analog process (copy of a copy) and degenerates the image quality. Particularly affected were small photo images with subtle gradations of tone such as Doug Miller's Moondark. The March newsletter was the first issue printed electronically and I felt that the Moondark images were uncommonly good. So now this our April issue will also be our second electronically printed newsletter and.....

The Solar System in April

Mercury- will be visible as an evening star in April but not until the end of the month. **Venus** will be visible low in the west as an evening star throughout April.

Mars- also remains a magnitude 1.5 evening star throughout April in the west northwest. Although

Jupiter loses magnitude in April from -2.2 to -2.0, it is

still high in the southern sky and second only to Venus, as the brightest planet. **Saturn**, although past its best, remains a spectacular sight in April shining high and bright in Taurus above and slightly to the left of Aldeberan.

Your **April Skymap** on page 5 shows the 10 p.m. position of Mars, Saturn Jupiter as they will appear during **Star Gaze VIII**. **Pluto, Uranus** and **Neptune** are out of conjunction with the sun in April but will be visible during the morning twilight for observing. Clear Skies!, Frank Sheldon *f.a.sheldon@att.net*

www.delmarvastargazers.org

Club Activities...

Club Meetings- We meet in the First Presbyterian Church in Smyrna, DE (653-8000) on the first Tuesday of each month from 7-9 PM. From US 13, turn west at Wendy's and go one stoplight on Commerce Street; the church is on the right directly across from the Fire Hall.

Future Meetings...The remaining meeting dates for 2002 will be: April 02, May 07, June 04, July 06, Picnic at Tuckahoe, August 06 to be announced, September 03, October 08, November 05, December 03 The regular meeting format includes discussion of club activities, observing highlights and an advertised presentation. We solicit suggestions for topics and presenters.

Club Observing... Observing is (usually) scheduled for the Friday nearest the New Moon to maximize the hours of *deepnight* without the moon in the sky. Unless otherwise stated, the monthly observing site will be at the baseball field in the camping area at Tuckahoe State Park. The monthly observing days left for the year 2002 will be: **Stargaze VIII** April 10-14, May 10, June 07, July 12, August 9, September 9,

No-Frills VII October 2-6, November 1, and December 6. The cloud or rain date for the monthly Friday observing will be the following Saturday, but don't trust the weather man! Go outside and look for yourself or check the CNN weather link on our web page. If you still can't decide, Call Don Surles (302) 653-9445 or Lyle Jones (302) 736-9842

Delmarva Star Gazers Officers for 2001-2002

President.....Don Surles 302 653 9445

Vice President.....John Flynn 302 999 9882

Secretary.....Lyle Jones 302 736 9842

Treasurer.....Kathy Sheldon 302 422 4695

How to Join the Delmarva Star Gazers: Anyone with an interest in any aspect of astronomy is welcome to Join.

NAME _____

ADDRESS _____

CITY, STATE & ZIP _____

E-MAIL ADDRESS (If any) _____

SPECIAL INTERESTS OR TALENTS _____

Please attach a check for \$15 made payable to Delmarva Stargazers and mail to Frank Sheldon, 20985 Fleatown Rd, Lincoln, DE 19960. Call club President Don Surles at 302-653-9445 for more info.

Moondark for April: Hacking a Webcam

Interested in trying something new with your telescope? Well, how often, *really*, do you use that webcam for video conferencing? Maybe you couldn't resist picking one up for \$5 "after mail-in rebate" at Staples? How about a screwdriver and 15 minutes to spare? In that amount of time you too can turn almost any webcam in to an astro-imager for capturing the Moon and bright planets.

Whether for your own enjoyment or group observing, you can break into digital astroimaging with a minimum of time and little or no cost. You may already have everything you need: a telescope with tracking capability, a computer (which you don't mind taking outside), some free software, and, of course, a webcam. I've tried a variety of models, although some are better than others. Nowadays, all come with a USB connection. CMOS chips are less light sensitive than CCD's, but will work for bright objects. A favorite camera among many hackers, the Philips Vesta Pro Scan (photo 1, at right), sells for about \$70 (and is getting hard to find) and has a CCD chip, good low-light sensitivity (<1 lux) and twice the resolution (640 x 480 pixels) of low-end cameras. This camera is often packaged as a portable page scanner and can be easily switched between office and astro uses. Geoff Chester (see web site below) has taken some remarkable images with this webcam.

With a webcam and a plastic, 35-mm film can (2), here are six steps for hacking a webcam:

1. Install camera software and driver as directed and verify that the camera works
2. Install **Vega 1.2** or **AstroVideo** and images in a well-lit room
3. Hack the camera by removing lens and filter (3), and adapt it to fit securely in telescope eyepiece using a film can with the bottom cut off (4) and hot glue (5)
4. Try imaging the Moon or bright planets in one or more nighttime sessions--practice here will payoff later--finding objects and focusing can be challenging!
5. Select, composite and process your images with **AstroStack**, **AstroVideo** and/or other image processing programs
6. Have fun with your new astro-camera! (6)

Modifications to one such webcam are depicted in steps at right ("mouseover" the image to see a brief description). Do try to keep dust and dirt away from the chip or these will appear as huge boulders on your computer screen! To finish (7), a film-can cap with a wedge cut-out will serve as a dust cover.

I have found these web sites to be very useful sources of instructions, advice, sample images and software: [QCUIAG](#), the QuickCam and Unconventional Imaging Astronomy Group; Geoff Chester's [WebCam Imaging Adventure](#); [Vega](#) image capture program (freeware); [AstroStack](#) image enhancement program (freeware); [AstroVideo](#) web site (shareware, \$30, but worth it); and [adapters](#) for Vesta Pro and other cameras.

If you try this, please let me know how it works for you. I'll have more on what to do with your webcam images of the Moon and bright planets in a future installment. Many thanks for advice and suggestions from Tom Pomponio, Bob Stewart, Teri Young and Dave Groski, and many others at the Webcam Hackshop 2002 at the Mallard Lodge. I have personally used these modifications successfully on a number of webcams and computers. But you alone are responsible for what happens to your webcam, computer, files, telescope and images. You should realize that these camera modifications will likely void the warranty, and that installed drivers and programs may not function or may have unintended or unfortunate consequences. Operation of the webcam and computer in the dark, with connecting cables, and under cold or dewy conditions presents additional challenges to the astroimager. This is one reason that I recommend that you practice with the webcam in a comfortable situation. Even inexpensive webcams simply modified are

Moondark is written by Doug Miller, published [on the web](#), and printed in the [Delmarva Star Gazers' Star Gazer News](#). Please address comments and suggestions to dcmliller@dmv.com. This document was last revised on 24 March 2002. All text and images copyright © 2002 Douglas C. Miller, All Rights Reserved. This material may not be reproduced in any form without prior permission.

