

# STAR GAZER NEWS

NEWSLETTER OF THE DELMARVA STARGAZERS

April 2003

WWW.DelmarvaStarGazers.Org

Volume 10 Number 10

At the March Meeting President, Don Surles brought the meeting to order at 7:15.

## New Members

James Harmstead, Drexel Hill, PA

## Outreach:

**Shehan Audubon Sanctuary** The *Under the Stars* astronomy presentation has been rescheduled again for Friday, April 4 with Saturday April 5 as backup.

**Constellation of the Month** The constellation for March was Cassiopeia (kass-ee-oh-PEE-uh) and was presented by new member Dave Wells.

Cassiopeia is a circumpolar constellation in the Andromeda group, constellations named after characters

Monthly Meeting Tuesday, April 3

## Filter Roundup

Don Surles and others

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

in the legend of Andromeda (Cepheus, Perseus, Pegasus and Cetus). Cassiopeia, the Queen of Joppa (or, variously, Ethiopia) is on the opposite side of Polaris from the Big Dipper, and culminates at midnight in early October.

Cassiopeia committed the sin of hubris by declaring that she and her daughter, Andromeda, were more beautiful than the Nereids. Offended they sought the aid of their protector, Poseidon, who caused flooding on the shores of Palestine and called forth the sea monster Cetus. Cepheus consulted the oracle of Ammon and was told his kingdom could be saved if Andromeda was sacrificed to Cetus. Andromeda was chained to the

## Also in this Issue

Mirror Making Workshop Pix .....Page 5  
Moondark for April 2003.....Page 6  
Registration Form for Star Gaze IX....Page 8

rocks near Joppa and as Cetus approached, Perseus came along and promised to save her from the monster in return for her hand in marriage. As punishment for her vanity, Poseidon cast Cassiopeia into the heavens in an unseemly position, as half the time her head is down. The readily recognizable W of Cassiopeia consists of 5 bright stars:

Alpha Cassiopeiae, SHEDAR (Magnitude 2.2), the southernmost star of Cassiopeia's chair. The name

Shedar comes directly from the Arabic word for breast and describes the star's position in the heart of the queen.

Beta Cassiopeiae, CAPH (Magnitude 2.3), is almost as bright as Shedar and stole the name of the whole W of the constellation. The five stars, spread out like the fingers of a hand, whence the Arabic name Caph which is derived from a phrase meaning "the stained hand". Caph is a useful star as it is only 9 minutes east of RA 0h and thus assists us in locating the equinoctial colure (the meridian passing through the equinoctial points). Gamma Cassiopeiae (Magnitude 2.5) is interesting in that oddly it is one of the brightest stars that has no proper "western" name, although the Chinese know it as, Tsih (the whip). It is an unpredictable variable star; normally averaging about magnitude 2.5, but in 1937 suddenly brightening to magnitude 1.6 and then over the next year fading to 3.0; it then gradually returned to its current magnitude.

Delta Cassiopeia, RUCHBAH (Magnitude 2.7). The old Arabian astronomers applied common names to the stars according to their position within the classical figures. Ruchbah is a good example as it is a reduction of a longer phrase that refers to Cassiopeia's knee. Epsilon Cassiopeia, SEGIN (Magnitude 3.4) is at the eastern end of the W at the top of the chair. There are two Messier objects in Cassiopeia, both open clusters. M52 (NGC7654) contains about 200 stars within a circle of 12' diameter. M103 (NGC 581) is the last object in the original Messier Catalogue. Other DSO's in Cassiopeia include NGC7635 (the "Bubble Nebula"), NGC7789, an exceptionally rich open cluster and the galaxies NGC147 and NGC185, distant neighbors of M31 the Andromeda Galaxy.

Cassiopeia is also the location of Tycho's Star, the great supernova of 1572, the most brilliant nova recorded in the past 500 years and one of the four known supernovae recorded in our galaxy. This "new star" was first seen by W. Schuler on 11/06/1572 and when independently observed by Tycho Brahe on 11/11/1572 it was more brilliant than Jupiter. It soon became the equal of Venus and was visible during the day. It was visible to the naked eye for 16 months. The dim nebulous remains do not compare with the expanding nebulosity resulting from the supernova in Taurus in 1054 (M1, NGC 1952, the "Crab Nebula"), but its average velocity of expansion, 5600 miles per second, is probably the highest velocity measured in our galaxy.

**Program: LXD-55 Mount & Scope**

This is Meade's GOTO Schmidt Newtonian as reviewed by Don Surles.

What is a GOTO drive system?

- a) must have RA & DEC drives;
- b) controller must understand and record scope's location based on Polaris and 1 or more triangulation stars ;
- c) system must "find" astro objects given the information in "b".

The two most popular methods of doing the above is with an optical encoder and drive motor combination that turns motion into digital information, and a stepper motor/controller that counts the steps created by motion and equates the steps to RA & DEC. The Stepper Motor/controller is the least expensive of the two methods.

The LXD 55 has GOTO capability – in theory. It has Stepper Motors for RA and DEC drives, software and hand controller to record it's position, and algorithms to triangulate and activate RA and DEC motors to facilitate "finding the object".

**Robustness** – the LXD 55 is lightweight and many people have learned to use it somewhat successfully with small scopes in the 3" to 5" range weighing less than 15 pounds. As the scope's weight increases, the accuracy of the GOTO system decreases due to flexing in the mount and the lightweight extruded aluminum tripod.

**Shortcomings of the Stepper Motor/controller system** – this arrangement demands that any movement of the scope be done via the Hand Controller's buttons. Moving the scope by any other method will cause the scope to lose it's place and it will have to be put thru the "setup" routine each time movement by any method other than the hand controller is attempted. Even simple tweaking to put an image in the center of the eyepiece vs the edge must be done via the hand controller. This is similar to drawing a circle with an Etch-a-Sketch - very tedious. I find the hand controller buttons are too small for man-size fingers on any night and impossible with gloves for anyone; darkness does not aid the operation. In my mind I can see the hand controller being tested in a well lighted lab by a person with Non-Gorilla fingers.

My biased and honest opinion: this system may work for some who :

- (1) are content to go thru the setup routines several times during an observing session (uh-oh's are gonna happen; the system will need tweaking)

(2) who do not get frustrated with tiny buttons in the dark and

(3)who have small telescopes 12-20" long under 15 pounds.

But, 1,2, & 3 put a lot of limitations on my observing options – plus taking some \$\$\$ out of my wallet. If the system would track well enuf for photography I might consider it a good buy - but so far I have found it does not perform as well as a standard fork-mounted SCT.

Basically, I am disappointed in the LXD55. It could be so much better if some consideration was given for movement of the scope via some means other than the hand controller, if the overall mount was beefier, and if the controller was more user-friendly. Another improvement that would add some cost and improve the accuracy would be the optical encoder/drive motor combination.

So, we can all hope for an enhanced LXD55...

**From the President's Desk.**

March 18, 2003

..Birds are singing, flowers are blooming, THE SNOW HAS MELTED! Did we just finish one of the coldest winters in our lifetime? There was a sign on Route 13 just north of Dover that defined our February and early March – Road crews had piled snow approximately ten feet high around the base of the sign. The sign read, "Next year we will shoot that groundhog!". Spring is certainly welcome this year.

Spring is a time of rebirth, a time of expectations for the coming growing season. It is my favorite season. This is a result of my farm-boy background. Spring was a time when we could finally get out of the house. We could play baseball in the cow pastures, catch tadpoles, camp out, run barefoot after school. Later on I learned that spring is the time for preparing the land for planting. I still remember the smell of freshly turned land in March – can't describe the smell but it is a pleasing one. Mother Nature has a way of leveling the playing field. One weather extreme is followed by a period of calm and then a period of "catch up" to offset the previous extreme. Lets hope our Spring will be a period of calm to makeup for the extreme Winter weather.

Our Nation could use a Spring season. We have been through a long and sad season of tension and possible armed conflict. Maybe this period of negative extremes can be followed by a season of forward looking positive leadership that will seek to plant a crop for the future peace instead of destroying the

fruits of past generations' efforts. Let us hope for the best in the coming days and weeks of this very dangerous and historic period.

Our Third Mid-Atlantic Mirror Makers weekend is history. We began with snow on the ground and a forecast of six to twelve inches for Thursday night through Friday noon. Fortunately, Mother Nature is a mirror maker and relented with the white stuff. We only received a couple or three inches of wet snow and the temps moved into the mid 40's. So, She cooperated fully. We had approximately 14-15 mirror makers and most people finished their very nice mirrors. Our facilities proved to be sufficient. And the food was outstanding. We have received many emails thanking us for sponsoring the weekend.

We are planning to produce a video explaining the mirror making process so that the next group of mirror makers will have an idea of what to expect in their short weekend of glass pushing. Currently, Jim Acker, James Morgan, and I are the entire crew for this endeavor. If you have talents related to video production and would like to participate, ie, become star, please have your agent contact either of us.

**Coming Events! Delmarva Star Gaze IX, April 30 through May 4, 2003, Tuckahoe State Park.** Please register early so that we can make final plans for the star party. We will have the usual food, make scope coats, mount Ronchii screens for testing the figure of your mirrors, present astronomy related slide shows and videos, enjoy the outdoors, and the company of fellow amateur astronomers. Oh, don't forget the swap meet – bring your goodie boxes and be prepared to haggle over the price of the Nagler you must have in your eyepiece case. The Star Gaze is a little later this year – the weather should be warmer. So, please put the weekend on your calendar and help us continue the celebration of the 10<sup>th</sup> anniversary of Delmarva Star Gazers.

What is the future of our Star Gazers? Every day Delmarva Star Gazers is presented with opportunities for growth and improvement. Most days those opportunities are passed over due to a lack of members who will utter the words "I will take on that

responsibility and make it happen". We have lots of members who "will assist" or will "help out" with a task or event; and your assistance and helping out is essential and appreciated very much. The success of our events relies on members' assistance and helping out. But, yes, there is always a "but", for years the people who accept the responsibility for making things happen have been the same very few core people. Some of those people need a break. We are missing opportunities because we rely on the same few overworked people to spearhead our programs.

An excellent example of this is our recent search for someone to assume the duties of assembling and publishing the Star Gazer News (our monthly newsletter). Two members did volunteer to assist Frank Sheldon with the newsletter and Frank and I thank you for your help. However, Frank has expressed his intent to cease involvement after many years. To date, no one has said they will be 100% responsible for the newsletter. Therefore this may be the last issue of Star Gazer News after ten years of continuous monthly publications.

Delmarva Star Gazers must have members step forward and assume responsibility for it's activities if we are to continue to exist as Delmarva Star Gazers. Please consider what our organization means to you and how you can become involved so that DSG continues to improve.

See you at Tuckahoe or the Church. Don...

#### **The Editor's Quadrant...**

I would like to amplify on the subject of our four month search for a Stargazer News Editor as discussed in Don's President remarks.

I first became involved with the Stargazer Newsletter in 1997, when with Doug Miller, I co-edited the May issue. At this time I wrote: "*In an effort to relieve Doug of these time consuming tasks, I'm going to temporarily phase into many of the editor's duties. I say temporarily because Doug and I want the newsletter to become the voice of the membership with ALL of the members participating.*"

As my duties increased, the member participation decreased. Our source of home grown programs

**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 Kathy Sheldon, 20985 Fleatown Rd, Lincoln, DE 19960. Call club President Don Surles at 302-653-9445 for more info.

decreased to the point where I was doing more writing than editing.

I will never cease involvement with the Star Gazers; I just won't be the one and only editor. The summer of 2002 provided some relief with a flood of "Tuckahoe Irregular's" observing notes and this also gave me an idea of how we could give the newsletter a shot in the arm. If all the members would contribute material of interest to the website, via email or the Yahoo page, this could be incorporated into the newsletter. This could include observations, equipment evaluation, outreach projects and also include notices and dates of events, picnics, starparties, other parties, pictures and boiler plate. The material submitted could be assembled for publication around the last Tuesday before the end of the month.

With the May issue as our target date for the new Newsletter, I thought we could phase into it as quickly as is practical. Initially I can have on hand a backup supply of Sky maps, moonsets, and monthly constellations. I

believe Doug Miller will be happy to continue Moondarks and Don his monthly Presidents Remarks. As the weather gets warmer, we should be getting more and more observing reports. I will be able to supply more photos and astronomy articles as my time frees up. My biggest dread in the past, had been trying to record minutes in the noisy meetings. Presenters will now provide descriptive text that will not have to be reedited.

Our earlier newsletters were locked in a rigid format, into which I tried to shoehorn text even when there was nothing to say. That will be a thing of the past. Now we can feature more local color like Steve's photo of that big buck in the woods. I think the preferred venue for submitting the observation reports as well as any new items should be the pages of the Delmarva Stargazer Yahoo group. Our remaining problems will be nice ones like an excess of material, in which case we would have to prioritize the contributions. The observing sessions are easy; they will be added in the order received as space permits unless there is a compelling reason to do otherwise.

Other concerns are the content suitability and source. We must insist on originality and avoidance of copyright material without permission and full attribution. There will be many gray areas here so we might even need an acceptance committee. I feel the use of common sense will prevail. This is an initial

draft so please feel free to recommend changes, additions and subtractions. FS

**The Solar System in April** Mercury- will be an evening star in early April at magnitude -1.1 As the month progresses, its altitude increases to 20° and the magnitude falls, reaching 2.3 at which time , viewing will actually be worse. **Venus** will remain a morning star in April and although bright, will be low in the ESE sky. **Mars**, at magnitude 0.5, improves still further in April with its disc size increasing from 7.5" to 9.4" as it reaches 0 magnitude. **Jupiter** although getting slightly fainter in April, is still the best game in town. **Saturn** continues to be great in the April evening sky, with the maximal ring opening at 27° tilt. **Uranus** can be seen in the April dawn near Venus. Also in the April dawn **Neptune** will probably be too low and dim to see well. **Pluto** still sits dimly in Ophiuchus rising around midnight but reaching a good viewing position as dawn approaches.

Clear Skies! Frank Sheldon *f.a.sheldon@att.net*

#### **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 2003 will be: April 01, May 06, June 03, July 05 (Picnic at Tuckahoe), August 05 (No meeting at church - schedule special event) September 02, October 07, November 04 and December 02 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 observing days for the year 2003 will be: April 4, April 30 - May 5 (Star Gaze IX), May 30, June 27, July 25, August 1, August 29, September 24 - 28 (No-Frills VII) October 24, November 21, December 19. 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.....Lyle Jones 302 736 9842**

**Secretary.....Keith Lohmeyer 410 482 6077**

**Treasurer.....Kathy Sheldon 302 422 4695**

Mirror Making Worekshop February 28 through March 2,



## Moondark for April: Just ten years ago...

In an outer arm of that spiral galaxy, a star ran out of thermonuclear fuel, collapsed onto its iron core and rebounded energetically. It went supernova.

The resulting burst of light reached Earth on 28 March, the [brightest in the northern sky](#) in 50 years. Astronomers called it SN 1993J and took full advantage: over 100 scientific papers have been published on it, literally rewriting the (advanced) textbooks about supernovae types and theories. It surprisingly shifted from Type II to Ib and drove astrophysical modelers nuts. Even better, this SN was only the third to have its progenitor star identified.

the SN displaced talk of the “string of pearls” comet recently discovered. ASCII character finder charts (top) were being posted along with magnitude sequences to estimate brightness. Now and again, someone would upload an [image of the supernova](#), and I used a program called “ftp” to download it, logging in as “anonymous” and remembering to set the mode to “binary.” File transfer would stall as often as it would terminate successfully.

I was working my way through the [Messier list](#) with my “big” scope at the time, a 4” S-C. Peaking at magnitude 11, it was barely within reach of that modest aperture (sketch at right). I followed SN 1993J through its highly unusual second maximum and out several weeks. I was amazed to see something so big, so bright and so far away that changed almost nightly. It was very reassuring that my estimates tracked those posted to the newsgroups (below). The last magnitude estimate, 13.0, was the most

mag star, clouds rolled across the New Mexico sky. Since that view was through a loaner 17” Dob, I knew that it was probably my last glimpse. Regardless, it was cool to watch the death of this faraway star.

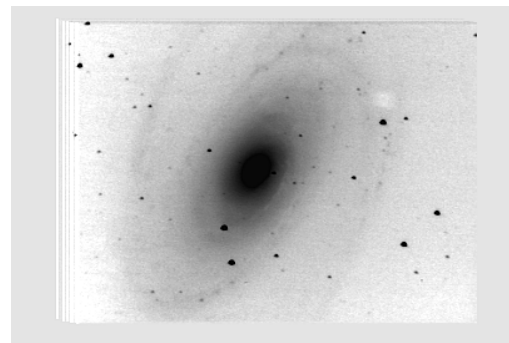
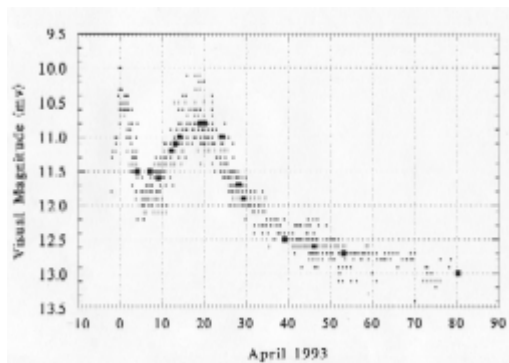
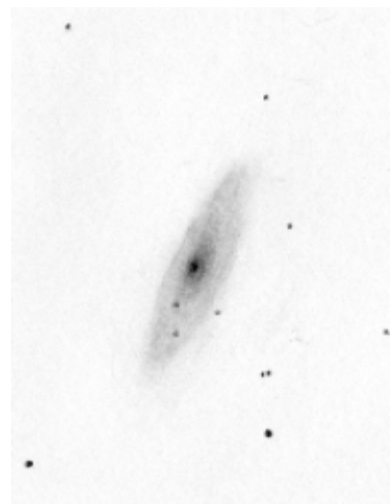
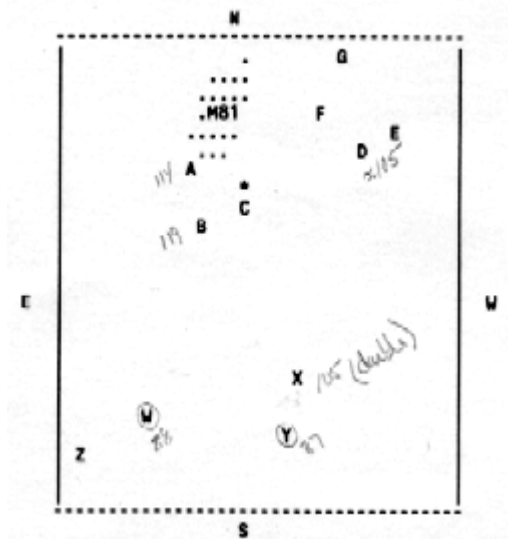
Since ‘93J, I’ve caught many [more supernovae with a CCD camera](#), which coincidentally burst on the amateur scene about the same time. I still marvel at the CCD’s ability to pull down photons and reveal a pinpoint galactic core

years later, bottom image).

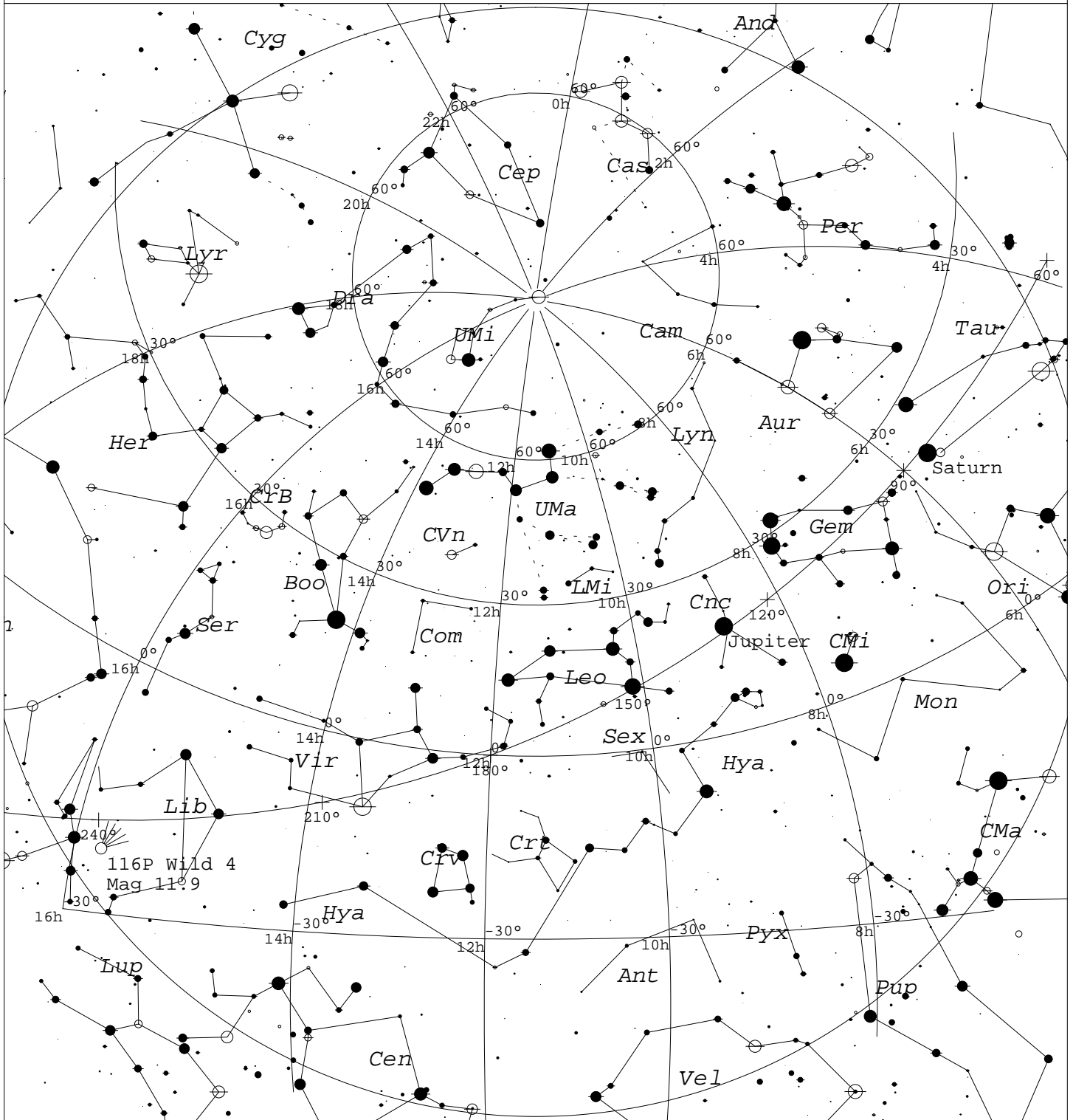
Ten years ago not all the big things happened in the sky. One event in particular, occurred just about the same time SN 1993J’s light reached Earth, right here in Smyrna: the first meeting of the [Delmarva Star Gazers](#).

decade. An active core membership supports the club’s dedicated leadership. This club now sponsors enough star parties and meetings to maintain a year-round buzz of astro-activity. *Well done Delmarva Star Gazers, and Happy Birthday!*

Moondark is written by [Doug Miller](#), published [on the web](#), and printed in the [Delmarva Star Gazers’ Star Gazer News](#). This document was last revised on 22 March 2003. *Text copyright © 2003 Douglas C. Miller, All Rights Reserved. This material may not be reproduced in any form without prior permission.*



# SKYMAP FOR APRIL 2003



## STARS

- <1    ● 3.5
- 1.5   ● 4
- 2     ● 4.5
- 2.5   ● >5
- 3

- Multiple star
- Variable star
- ☄ Comet
- ☉ Galaxy
- Bright nebula

## SYMBOLS

- Dark nebula
- ⊕ Globular cluster
- ⊙ Open cluster
- ⊖ Planetary nebula
- ⊞ Quasar
- △ Radio source
- × X-ray source
- Other object

TUCKAHOE STATE PARK  
APRIL 30, 2200 HOURS EDT

Local Time: 22:00:00 30-Apr-2003

UTC: 02:00:00 1-May-2003

Sidereal Time: 11:26:38

Location: 38° 59' 0" N 76° 56' 0" W RA: 11h26m38s Dec: +38° 58' Field: 182.0°

Julian Day: 2452760.5833



are pleased to announce our ninth annual Star Party from April 30 through May 4, 2003 at:  
Tuckahoe State Park near Queen Anne, MD.

The registration fee includes camping fee for the observing area. ALL NIGHT STARGAZER COFFEE, as always, will be free. Sodas and hot dogs will be available at minimal cost. Campers will be permitted to park and set up by their scopes, but there are no hookups or electricity in the observation area.

**To celebrate our tenth year, we have set up a cruise on the Chesapeake Bay with Chesapeake Bay Maritime Museum in St. Michaels, MD. for either the evening of May 1<sup>st</sup> or 2<sup>nd</sup>. The cost will be \$30 per person with room for 32 passengers. All attendees are encouraged to register in advance for this event due to limited space and growing popularity of the Star Gaze Star Party. Your badges and entrance-parking permit will be sent to you on receipt of payment.**

**REGISTRATION for Star Gaze IX**

	2-3 Days		4 Days		5 Days		CRUISE
	Pre-Registration	After April 15	Pre-Registration	After April 15	Pre-Registration	After April 15	
1 Person	\$20	\$35	\$25	\$40	\$30	\$45	\$30 per person
2 Persons	\$35	\$50	\$45	\$60	\$50	\$65	
Family (3 or more)	\$50	\$65	\$55	\$70	\$60	\$75	

For more information, visit our web site at: [www.delmarvastargazers.org](http://www.delmarvastargazers.org) , call or e-mail:  
Don Surles, President (302) 653-9445 E-mail: [don.r.surles-1@usa.dupont.com](mailto:don.r.surles-1@usa.dupont.com)  
Lyle Jones, Vice-President (302) 736-9842 E-mail: [lyjones@state.de.us](mailto:lyjones@state.de.us)

----- cut here -----

**REGISTRATION FORM**

**Make check payable to *Delmarva Stargazers***

**Mail to Lyle Jones 230 N. Bradford St., Dover DE 19904 (302) 736- 9842**

Name \_\_\_\_\_ What Day Will You Arrive? \_\_\_\_\_  
 Evening/ Weekend Phone \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_  
 State \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Automobile License number \_\_\_\_\_  
 Number in your party \_\_\_\_\_ Cruise \_\_\_\_\_ (Refunded, if less than 25 passengers)

Attendee #2 \_\_\_\_\_ Attendee #3 \_\_\_\_\_  
 Attendee #4 \_\_\_\_\_ Attendee#5 \_\_\_\_\_  
 Attendee #6 \_\_\_\_\_ Attendee#7 \_\_\_\_\_

**Use TABLE above to calculate Registration Fee(s). TOTAL ENCLOSED \_\_\_\_\_**  
**YOUR BADGES AND ENTRANCE PARKING PERMIT IS YOUR RECEIPT. Sorry no refunds.**