STAR GAZER NEWS

NEWSLETTER OF THE DELMARVA STARGAZERS

January 2003 **WWW.DelmarvaStarGazers.Org** Volume 10 Number 7

At the December Meeting

Don Surles brought the meeting to order at 7:15 with 14 members and guests attending.

Outreach:

Killens Pond November 16-17 The scheduled all night presentations and Leonid Observations were cancelled because of inclement weather.

Shehan Audubon Sanctuary December 4

This *Under the Stars* astronomy presentation, scheduled at the dark sky site near Easton MD for Wednesday, Dec. 4, was rescheduled for Feb 7, due to weather. The program starts at 7:00 p.m. with Stargazing activities and ends around 9:00 p.m. with drinking coffee and hot chocolate around a campfire.

AstroBreakfast scheduled tenatively for Jan 18th.

Constellation of the Month- Pegasus (PEG-a-sus)

Presented by Tim Milligan

Tim gave a short slide presentation that highlighted the Mythology, interesting stars and Deep-Sky objects of Pegasus. Pegasus, from Greek mythology, was the winged horse that Perseus rode to rescue Andromeda from Cetus the Sea Monster.

Tim listed the number of Pegasus objects from popular catalogs to include: PGC (3250 galaxies), NGC/IC (443 objects), Messier (1), and USNO WDS (2260 multiple stars). Tim then discussed the variable star AG Pegasi, a Symbiotic star system with a massive B type subdwarf and a M type red giant. The symbiotic nature, matter exchange, is what drives the system's variability.

The presentation then moved on to DSOs. First up was the only Messier object, the globular cluster M15. At Magnitude 6 and 30.6 thousand light years away, this globular has a bright core and a planetary nebula (Pease 1). Next up were two galaxy clusters: the Pegasus I cluster - 11 bright galaxies at 250 million light years distance and Stephan's Quintet - 5 faint galaxies, 4 gravitationally bound, at 297 million light years distance and another (NGC 7320) optically aligned with the group at 43 million years distance.

Monthly Meeting Tuesday, January 6

Astronomy Magazines

Don Surles and others

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

Also in this Issue

Program: Eyepieces

Don started with the list below showing the wide variety of eyepieces available. All were offered in the American 1.25" size with the American brands also being offered in the 2.0"size. Only the foreign brands were offered in the 0.965 " size

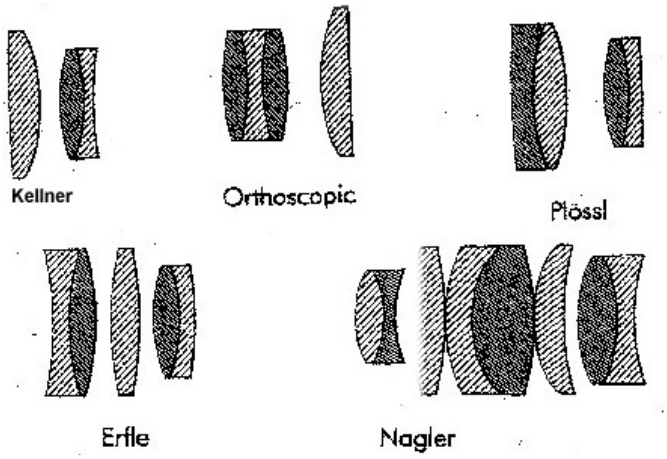
Last Call for 2003 Dues

Delinquent Members will be dropped from Roster

BRAND NAMES	Type	Focal legnth
Celestron	Plossl, Ultima	6.3 -42 mm
Clave (Kinoptik)	Plossl	3-35 mm
Collins Electro	Electric?	25 mm
Edmund	Kellner (RKE)	8-28 mm
Leitz	?	Variable
Meade	Plossl, Super Plossl, SW-angle, UW-angle	6.4-50 mm
Nikon	Ortho, Kellner, Plossl	6-35 mm
Olympus	?	5-30 mm
Pentax	?	5.2-40 mm
Speers-Waler	67 to 89 degrees!	4.9-30 mm
Takahashi	?	5-50 mm
Televue	Plossl, Radian, Panoptic,Nagler types	3-55 mm
University Optics	Abbe Ortho, Konig, Super Erfle, WA Plossl	4-55 mm
Vernonscope	Brandon	8-32 mm
Vixen	Lanthanum	2.5-25 mm
Zeiss	Abbe Ortho	4-34

This bewildering array of eyepieces has evolved as the focal ratios of the telescopes themselves become ever

faster and the focal lengths ever shorter. If all scopes were *f*8 or higher we might have gotten by with just the ortho or plossl designs.
Fortunately all of the these eyepieces can be reduced to variations of 5 basic types which are depicted schematically below:



Don summarized all of this with:
Rules to Live by:
1-Long Focal Length Scopes (*f* 7+) are forgiving in eyepiece design They are not made for wide angle viewing but for high power viewing. Orthos do well.
2- Short Focal Length Scopes are not forgiving in eyepiece design They are made for deep sky low power viewing and are prone to coma, poor collimation etc. They are normally larger diameter lower quality optics. Go for the super corrected *space walking* eyepieces.
3-Old eyepieces are not better that new ones Modern eyepieces are much better.
4- Demand Anti-reflective coatings The more the better.
5-Be Critical Don't assume a good brand name is a good eyepiece. Compare it with others and if you are not satisfied send it back.
6-Protect your investment Keep dry in a foam lined case Clean sparingly with cotton Q-tips

From the President's Desk....
December 21, 2002
'Tis the season…I hope you had a Merry Christmas and are having a Happy New Year! Seeing family and friends at this time of year is so enjoyable and is the catalyst for making some of our best memories. This is one of our rewards for a year of hard work. Enjoy your time with your friends and family.
2003 is going to be a great year – when we look back on 2003 fond memories will be plentiful. Before we jump ahead lets back up and survey what's in store for Delmarva Star Gazers.
First, I hope each one of you received many astronomical gifts for Christmas. And if you did, I want you to remember that sharing is great for your stargazing buddies – actually, sharing is one of the greatest pleasures of stargazing regardless of what Santa did or did not leave under the tree. I am looking forward to our first couple of stargazing sessions.
What is significant about 2003? It's our 10th anniversary! Yes, Delmarva Star Gazers will be 10 years old in April. So, we must have a birthday party. We need a birthday party committee…this is a solicitation, a request, a draft notice, and an opportunity for our socially oriented and talented members. Please step forward and show us your skills in action. We need you!
Other events for 2003 include the Audubon Society star party that has been rescheduled to February (Lyle will fill in the details later), our mirror making weekend Feb 28-Mar 2, Delmarva Star Gaze IX in April, Mars at its closest distance to Earth in 50,000 years, comets, atmospheric phenomena, new scopes, good food, stargazing with your fellow Gazers, and then there are the unknowns that make our hobby so interesting.
Last week Karen left a message on my business phone that we had received a package from Burgess Optical. Six of us Star Gazers have been waiting since our Spring star party for some 25X100 binoculars from our friend Bill Burgess of Burgess Optical. My first question to Karen was "Is it one or six binos?" and her response that the package weighed 37 pounds led me to the conclusion that we had indeed received six binos. When I finally arrived home and dug into the large package I found it was double boxed with peanuts between the boxes – packed very well. Then there were individual boxes that contained the "substantial" bino cases. Bottom line, there was only two binos in the huge and heavy package. Historically, 25X100 binos have been $1000-2000 for quality that just didn't seem good enough. Historically, the field of view has been very narrow and eye relief uncomfortably short.

2003 Club Dues ($15.00)
are payable in January
Make check payable to *Delmarva Stargazers*
and mail to Kathy Sheldon

Overall, the large binos have historically been a disappointment. But Bill Burgess is a salesman who knows what amateur astronomers want in their toys. We took a chance on Burgess Optical – he had only a picture of what the bino would resemble and a description of the optical system when we placed our order last April.
Now, after a couple of days and nights playing with the bino I have to confess that his Chinese-made bino is very satisfactory in both quality and price. The FOV is huge, eye relief is comfortable, collimation is "right on". These glasses are NICE! They are a pleasure to use. If you get a chance to peer though a Burgess Optical 25X100 please do so – I think you will be impressed. You will need a substantial tripod because they are HEAVY and at 25X they cannot be held steady. A parallelogram mount would be a nice addition. I look forward to other products for amateur astronomers from Bill in the near future.
Last night Doug Norton and I experimented with the bino and various filters used on only one of the eyepieces. We learned the brain can process both a filtered and unfiltered image to create a single image. I can't wait until a moonless night under dark skies to check out the nebulae.
We have received a shipment of 2003 calendars and Observer's Handbooks from the Royal Astronomical Society of Canada. They will be available at our January meeting. The calendars are $7 and the Handbooks are $15 each. Please see Kathy to purchase them.
We have also received a very nice german equitorial mount, tripod and dual axis drive for our prominence scope. The mount is sold by Orion; another nice piece of equipment from China. I will bring it to the January meeting for your review.
Our January meeting will also focus on amateur astronomy magazines. We will review Astronomy, Sky & Telescope, and others. "Others" are important because we need competition so that amateur astronomers have information from several viewpoints covering all aspects of our hobby. Well, enuf for now. See you at the January meeting Don.

The Editor's Quadrant....
The Solar System in January
Mercury- goes into conjunction with the sun on January 11. It will be briefly visible as an evening star at the beginning of January low in the WSW and as a morning star at the end of January, low in the SE. **Venus** will be a morning star in January, rising around 4:00 a.m. Around January 11th, it will show its crescent phase.
Mars- rises near Venus as a morning star in the beginning of January. It is still too dim and too small to show much detail. **Jupiter** rises at dusk during January and is visible all night, transiting after midnight. **Saturn** is visible in January from dusk through most of the night, transiting around 11:00 p.m. at the beginning of the month and 9:00 p.m. at the end of the month. Both **Uranus** and **Neptune** are still in Capricornus and **Pluto** has emerged from conjunction with the Sun in December.
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 meeting dates for 2003 will be: January 07, February 04, March 04, 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: January 3, January 31, February 28,

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.

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

The December 7th Christmas Party








Moondark for January: *Moon Phase Calendar for 2003*

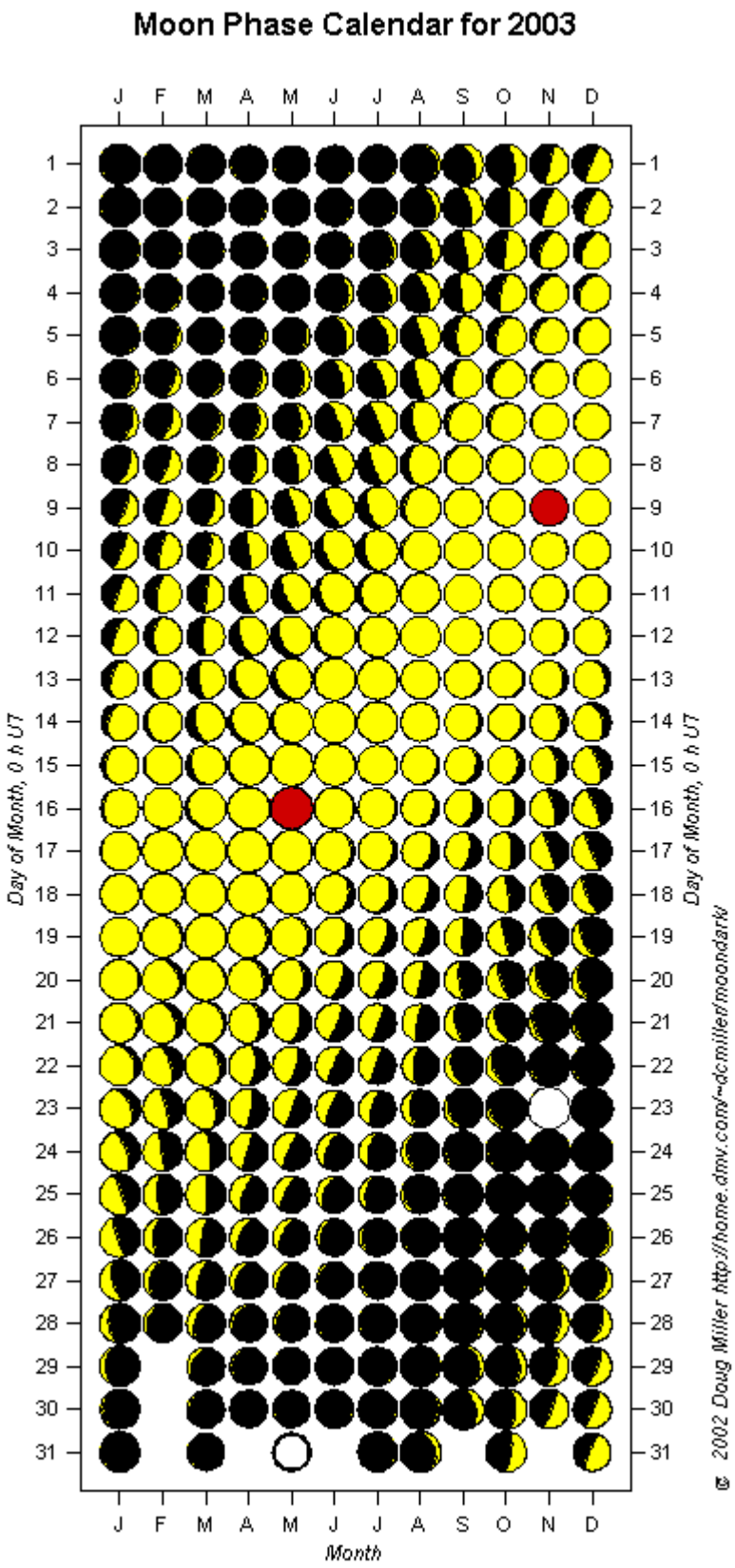
Is this the year of the planets? Along with the Sun and the Moon, each of the five bright planets takes the stage in the drama above. As 2003 opens, Saturn, Jupiter and brilliant Venus arc west to east across the sky before morning twilight. Mars draws near, and in late August reaches its closest point in 15 years. There are four eclipses, two each of the solar and lunar varieties. Rarest of all, on 7 May 2003, Mercury will transit the Sun for the first time of only 13 this century. Observer in northeast North America will see the closing acts of this event shortly after sunrise.

The calendar at right shows the Moon's phase, relative apparent size, and position angle of the bright limb for each night at 0 h UT on the date indicated. Total lunar eclipses are shown in red (on 16 May and 8-9 November), and solar eclipses are depicted as annular (ring symbol, 31 May) or total (white disk, 23 November). This year, full moons advance from the middle of the months through the second week by year's end. Messier marathoners must work around the bright, waning gibbous Moon of March.

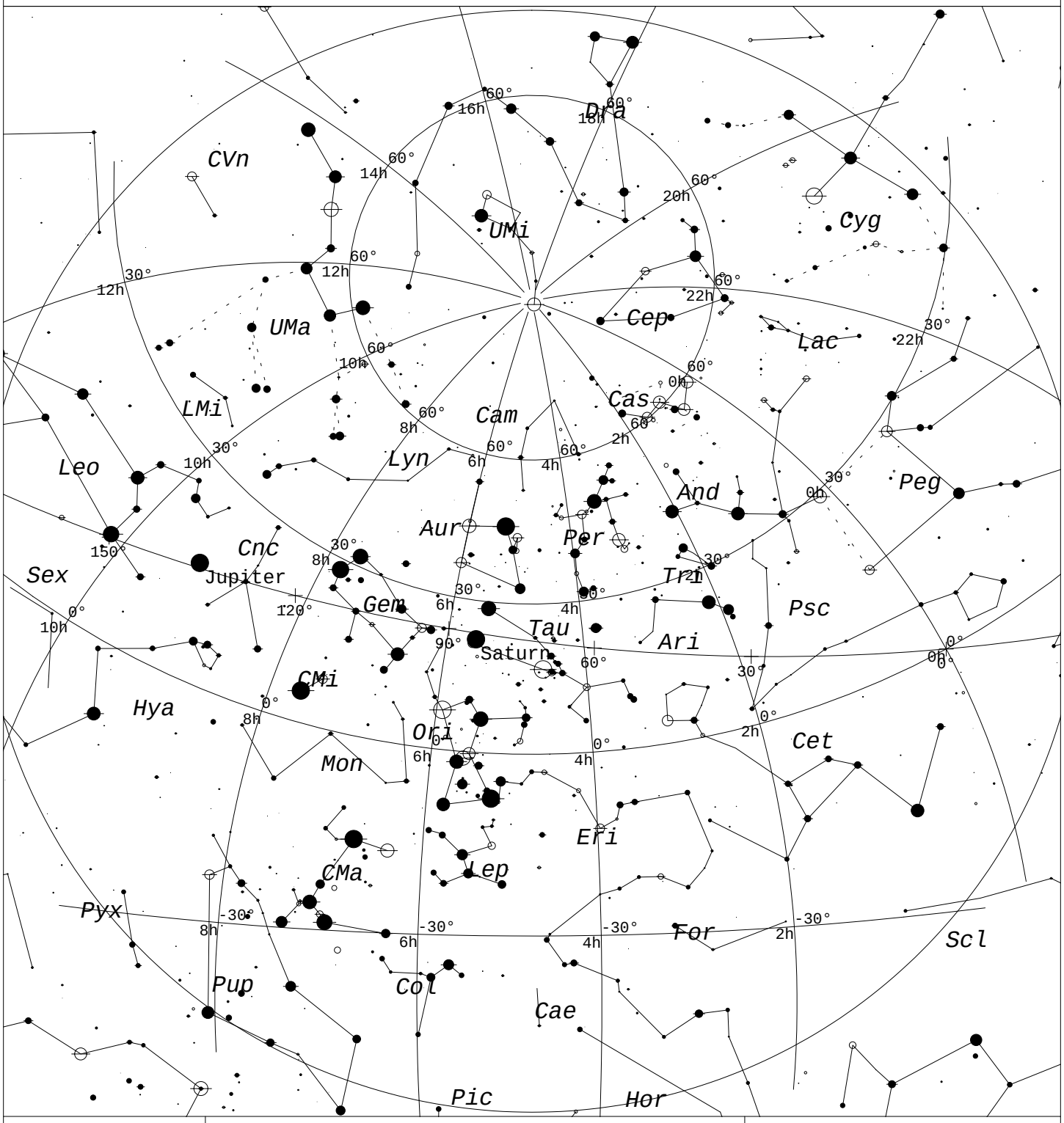
For us on this planet: Perihelion, 4 January; Equinox, 21 March; Solstice, 21 June; Aphelion, 4 July; Equinox, 23 September, Solstice; 22 December 2003. All times are UT. Eastern Standard Time is 5 hours behind Universal Time; Daylight Saving Time, between 6 April and 26 October 2003, is 4 hours behind.

For everything about time zones and daylight saving time in other corners of the world, surf to www.timeanddate.com. Time is exact at the US Naval Observatory Master Clock: tycho.usno.navy.mil/what.html. For rises, sets and twilights, try the USNO's Data Services page, aa.usno.navy.mil/data/. Visit NASA's Eclipse Home Page (sunearth.gsfc.nasa.gov/eclipse/eclipse.html) or ask Mr. Eclipse (www.mreclipse.com/MrEclipse.html). Be sure to check out the 2003 Transit of Mercury page at sunearth.gsfc.nasa.gov/eclipse/OH/transit03.htm.

Moondark is written by Doug Miller and published on the web and in the Delmarva Star Gazers' *Star Gazer News.* This document was last revised on 14 December '02.



SKYMAP FOR JANUARY 2003



STARS			SYMBOLS				
<1	3.5		Multiple star	Dark nebula	Radio source
1.5	4		Variable star	Globular cluster	X-ray source
2	4.5		Comet	Open cluster	Other object
2.5	>5		Galaxy	Planetary nebula	
3			Bright nebula	Quasar	

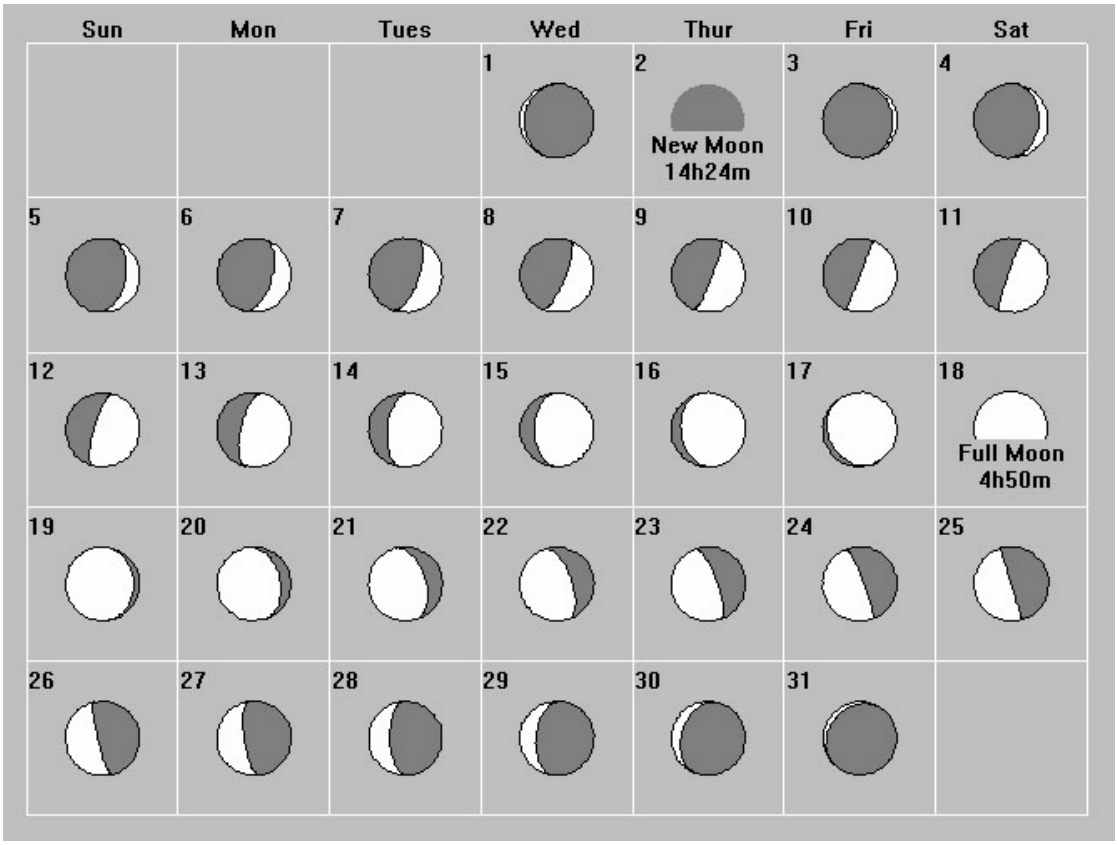
TUCKAHOE STATE PARK
JANUARY 3, 2200 HOURS EST

Local Time: 22:00:00 3-Jan-2003 UTC: 03:00:00 4-Jan-2003 Sidereal Time: 04:45:31
Location: 38° 59' 0" N 76° 56' 0" W RA: 4h45m31s Dec: +38° 58' Field: 182.0° Julian Day: 2452643.6250

Sun and Moon Data for January 2003 Tuckahoe Park, MD

38.59°N 75.56°W 4.5hrW Standard Time Astronomical Twilight

	Sun				Moon				
Date	Twi.	Rise	Transit	Set	Twi.	Rise	Transit	Set	%
01/01/2003	6:15a	7:50a	12:36p	5:22p	6:57p	6:43a	11:29a	4:11p	2
01/02/2003	6:15a	7:50a	12:36p	5:22p	6:58p	7:49a	12:29p	5:09p	0
01/03/2003	6:15a	7:50a	12:37p	5:23p	6:58p	8:47a	1:28p	6:13p	1
01/04/2003	6:15a	7:50a	12:37p	5:24p	6:59p	9:34a	2:24p	7:19p	4
01/05/2003	6:16a	7:50a	12:38p	5:25p	7:00p	10:13a	3:16p	8:25p	9
01/06/2003	6:16a	7:50a	12:38p	5:26p	7:01p	10:46a	4:04p	9:29p	16
01/07/2003	6:16a	7:50a	12:38p	5:27p	7:01p	11:13a	4:48p	10:30p	24
01/08/2003	6:16a	7:50a	12:39p	5:28p	7:02p	11:38a	5:29p	11:29p	33
01/09/2003	6:16a	7:50a	12:39p	5:29p	7:03p	12:01p	6:09p	*****	42
01/10/2003	6:16a	7:50a	12:40p	5:30p	7:04p	12:23p	6:49p	12:27a	51
01/11/2003	6:16a	7:50a	12:40p	5:31p	7:05p	12:47p	7:30p	1:24a	61
01/12/2003	6:16a	7:50a	12:41p	5:32p	7:06p	1:13p	8:13p	2:23a	70
01/13/2003	6:15a	7:49a	12:41p	5:33p	7:07p	1:42p	8:59p	3:22a	78
01/14/2003	6:15a	7:49a	12:41p	5:34p	7:08p	2:17p	9:48p	4:24a	86
01/15/2003	6:15a	7:49a	12:42p	5:35p	7:08p	2:59p	10:40p	5:26a	92
01/16/2003	6:15a	7:48a	12:42p	5:36p	7:09p	3:49p	11:36p	6:26a	96
01/17/2003	6:15a	7:48a	12:42p	5:37p	7:10p	4:47p	*****	7:23a	99
01/18/2003	6:14a	7:47a	12:43p	5:38p	7:11p	5:53p	12:33a	8:14a	100
01/19/2003	6:14a	7:47a	12:43p	5:39p	7:12p	7:03p	1:29a	8:58a	98
01/20/2003	6:14a	7:47a	12:43p	5:40p	7:13p	8:14p	2:24a	9:36a	94
01/21/2003	6:13a	7:46a	12:44p	5:41p	7:14p	9:25p	3:17a	10:09a	87
01/22/2003	6:13a	7:45a	12:44p	5:43p	7:15p	10:35p	4:07a	10:38a	79
01/23/2003	6:13a	7:45a	12:44p	5:44p	7:16p	11:46p	4:56a	11:07a	69
01/24/2003	6:12a	7:44a	12:44p	5:45p	7:17p	*****	5:45a	11:35a	58
01/25/2003	6:12a	7:44a	12:45p	5:46p	7:18p	12:56a	6:35a	12:05p	46
01/26/2003	6:11a	7:43a	12:45p	5:47p	7:19p	2:07a	7:27a	12:38p	35
01/27/2003	6:10a	7:42a	12:45p	5:48p	7:20p	3:19a	8:21a	1:17p	25
01/28/2003	6:10a	7:41a	12:45p	5:49p	7:21p	4:30a	9:18a	2:03p	16
01/29/2003	6:09a	7:41a	12:45p	5:50p	7:22p	5:36a	10:17a	2:56p	9
01/30/2003	6:09a	7:40a	12:46p	5:52p	7:23p	6:36a	11:15a	3:57p	4
01/31/2003	6:08a	7:39a	12:46p	5:53p	7:24p	7:26a	12:12p	5:02p	1



CONSTELLATION FOR JANUARY 2003: PERSEUS