

Astronomy Software Round-Up

Tom Pomponio

This article is a follow up to a demonstration I gave at the December Club meeting. If you received this news letter in the mail, it would be worth downloading the PDF copy from www.delmarvastargazers.org so you can click on the hypertext links.

Some free or shareware programs I found.

Cartes du Ciel "Sky Charts" - Windows – stable version 2 – works on older computers
<http://www.stargazing.net/astrocp/>

Cartes du Ciel – new beta version 3 for Window / Linux
<http://www.ap-i.net/skychart/index.php>

Stellarium – a new photo realistic planetarium program – Windows / OS X / Linux
<http://www.stellarium.org/>

Celestia – innovative spaceship tours thru the universe – Window / OS X / Linux
<http://www.shatters.net/celestia/>

C2A – a more polished version of Cartes du Ciel – Windows – works on older laptops
<http://astrosurf.com/c2a/english/index.htm>

WinStars 2.0 – specializes in solar system planets and satellites
<http://www.winstars.net/english/index.html>

Where is M13? – Gives a unique 3D perspective of where deepsky objects are in relationship to the Milky way – Window / OS X / Linux
<http://www.thinkastronomy.com/M13/index.html>

Free Web based planetarium and sky charts.

Skymaps.com – free PDF sky charts each month
<http://www.skymaps.com/>

Sky and Telescope magazine – interactive chart – free but requires a logon
<http://www.skyandtelescope.com/observing/skychart/>

Sky View Café – a free Java based planetarium applet
<http://www.skyviewcafe.com/>

Google Earth Sky – free download with embedded photographs – requires a live high speed internet connection to use – Windows / OS X / Linux
<http://earth.google.com/sky>

Dome of the Sky.com – free online star charts and other features
<http://domeofthesky.com/foyer.html>

Astronomy Tidbits for January

Tim Milligan

Karl Jansky (1905-1950) – American radio engineer who was the first to detect radio waves from the Milky Way (1931) during research into "static" for Bell Telephone Labs. In 1973 the IAU assigned the name "jansky" to the unit of strength of a radio wave emission.

Jewel Box – Nickname for the open star cluster NGC 4755.

Janus – Small satellite of Saturn discovered in 1978. It is 137x 124x99 miles and is co-orbital with the moon Epimetheus. The two may have been one body in the past.

The Delmarva Stargazers Announces a Writing Contest.

The DMSG will raffle away astronomy gifts to members who submit articles to the Star Gazer News.

How to enter:

1 Open to DMSG members.

2 Members may submit original articles at least 500 words (1/2 page) for publication in the Star Gazer News.

3 Articles **must** be authored by the member.

4 Pictures can be included, but they do not count towards word count (1 picture = 1000 words).

5 Must be astronomy related. Each article = one chance in the raffle. The drawing will be made at the star parties based on the previous 6 issues – need not attend to win (but it would be nice to see you there). *The editor of the Star Gazer News qualifies articles submitted.*

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

NAME _____

ADDRESS _____

CITY, STATE & ZIP _____

E-MAIL ADDRESS (if any) _____

Do you need the newsletter snail mailed to you (Y/N)? _____

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 Tom Pomponio at 302-736-0157 for more information.

Shallow Sky Sorties – January 2008

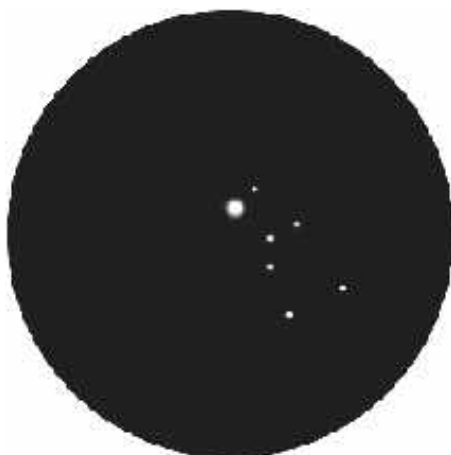
Jim Tomney

A lot of eyes were on Gemini last month, not just for the annual meteor shower it hosts but also with Mars' apparition. While neither of those wonders are fair game for my 60mm scope, there are a couple of great targets in the Twins for owners of a small refractor.

Off of Castor's foot is the splendid open cluster M35. While catalogued by Messier in 1764 the famous comet hunter acknowledged that he was not the first to notice it. Philippe Loys de Cheseaux, Swiss astronomer whose [list](#) of some 20 objects includes "one above the northern feet of Gemini", as well as English astronomer John Bevis had clearly seen this open cluster in advance of Charles Messier.

When checking out suitable objects for my refractor in suburban skies I always prefer items that are within a reasonable star hop of a visible star. Fortunately due to Gemini's height at our latitude it is possible to see Mu Gemini naked eye, and from there arc out to the last star of Castor's foot (1 Gem) and upwards a bit for M35. The 7 x 50 binoculars pick it up readily, and it's only a few minutes to get the cluster into the low power field of view. The cluster, about the size of the full moon, has about a dozen stars of varying brightness taking up most of the field. Doubling the magnification reels in a few more stars, making the ones which flicker in and out at low magnification hold steadier. If you have better aperture you'll not only see more stars but also likely notice that M35 does have a few yellowish colored stars. If your skies are dark you may also see a misty patch on the southwest border of the cluster – open cluster NGC 2158. The combination of the brighter, coarser M35 with this more distant and tight open cluster makes for a beautiful sight, especially in a scope of 10" or more.

Whenever I'm gazing at M35 I think back to a view several years ago when Jupiter approached the cluster making for an amazing pairing. In fact M35 is less than a degree north of the ecliptic so it is not unusual for it to be visited by one of the wanderers (can you name two other open clusters whose proximity to the ecliptic allow for planetary pairings?). The other interesting piece of trivia is that M35 more or less marks the northern limit of the ecliptic – if you have planetarium type software key in the summer solstice and see where the Sun lies.



NGC 2392 - Eskimo Nebula
60mm Refractor

On a good night I can also make out Delta Gemini, a 3.5 magnitude star, and lying about two and a quarter degrees southeast of it is NGC 2392, a planetary nebula better known as the Eskimo nebula. South from Delta there's a triangle of stars (56, 61, 63 Gem) that one can hop to, and then the planetary quarry lies midway and a little east of a line between 61 and 63. At roughly 45" (similar to Jupiter) in size it should be non-stellar even in my low power field. It takes a few minutes to locate the triangle and then as I swing east I come across it, a double star whose southern member is puffy. Stepping up to the 10mm eyepiece makes it clear – this is a circular puff of light, even in illumination and without a central star. The magnitude of the Eskimo nebula is listed at about 8.5, so I'm pretty

pleased at snagging this given that the limiting magnitude of the scope is probably around 9.5 to 10. The star north of the nebula is a bit brighter at magnitude 8.3, so this provides a great example of how spreading the light from a point source to a disk makes it fainter than you might expect. In a larger scope you should also be able to locate its central star, and possibly begin to make out a fainter halo, the "parka" of the Eskimo.

It's a new year – may it be full of clear skies and observing opportunities for us all!

Your 2007-2008 Officers

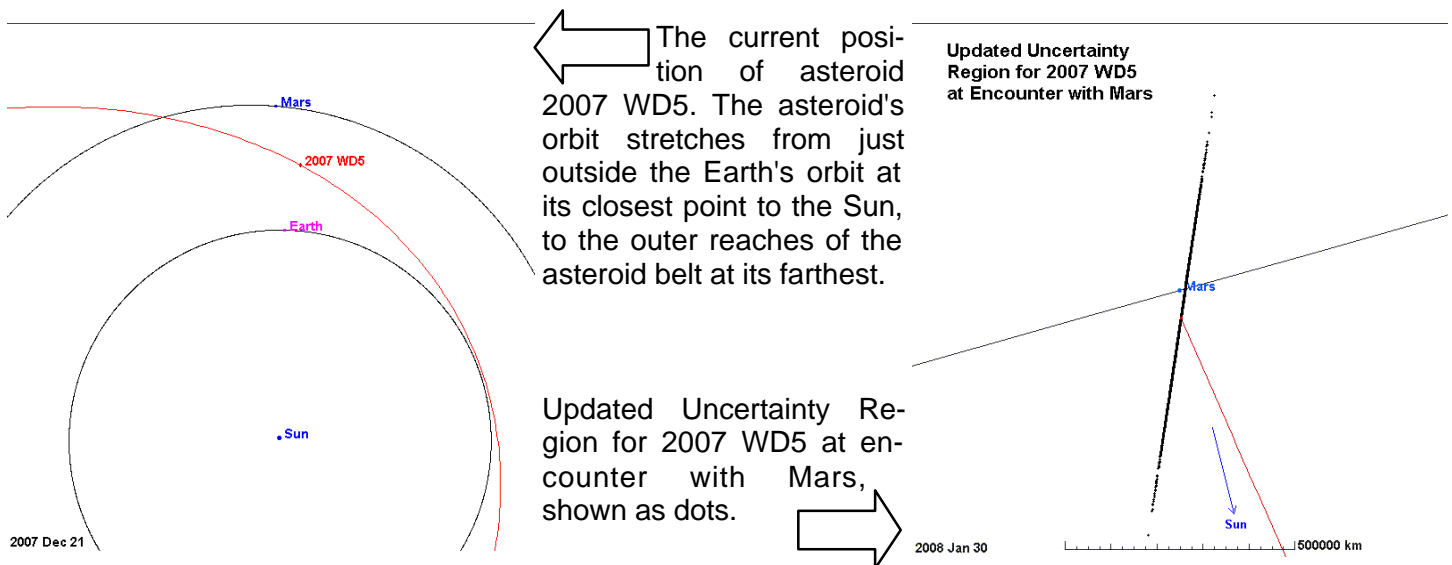
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Mars Impact Probability Increases to 4 Percent

Don Yeomans, Paul Chodas and Steve Chesley
NASA/JPL Near-Earth Object Program Office
December 28, 2007

The impact probability for a collision of asteroid 2007 WD5 with Mars on January 30 has increased from 1.3% to 3.9%.

Pre-discovery observations of asteroid 2007 WD5, taken on November 8, 2007 have allowed its orbit to be refined and the uncertainties for the late January Mars encounter have been improved. The impact probability resulting from the recent orbit refinement has increased to a surprising 3.9% (about 1 in 25 odds). The uncertainty region during the Mars encounter now extends over 400,000 km along a very narrow ellipsoid that is only 600 km wide. Since the uncertainty region intersects Mars itself, a Mars impact is still possible. However, the most likely scenario is that additional observations of the asteroid will allow the uncertainty region to shrink so that a Mars impact is ruled out. In the unlikely event of an impact, the time would be 2008 January 30 at 10:56 UT (2:56 a.m. PST) with an uncertainty of a few minutes.



The pre-discovery observations were located by Andy Puckett, a recent Ph.D. from the University of Chicago who has since moved to the University of Alaska Anchorage. Dr. Puckett located the observations in the archive of the Sloan Digital Sky Survey II, which contains extensive repeat coverage of 300 square degrees along the sky's celestial equator. The observations were taken using a 2.5 meter aperture telescope at the Apache Point Observatory near Cloudcroft, New Mexico. For the recent orbit refinement, these pre-discovery observations on November 8 were added to the existing observations provided by the Catalina Sky Survey and Spacewatch observatories (both near Tucson AZ) as well as New Mexico Tech's Magdalena Ridge Observatory.

Go to <http://neo.jpl.nasa.gov/news/> or Spaceweather.com for updates

The Solar System in January- Mercury is visible in evening twilight as it approaches greatest elongation E on the 22nd. Venus shines bright in the early mornin' sky, pairing up with Jupiter at the end of the month. Mars is visible all night if the sky is clear. Jupiter slowly moves away from Sol this month, finally ending up in dark sky by month's end. Saturn rises mid evening. The rings are currentlt tilted at 6.7° increasing to 9.9° by May. Keep your eyes on the rings this year. The tilt will be only 0.8° by year-end. Uranus is still in Aquarius, and can be seen naked eye if you know where to look. Neptune is in Capricornus and sets just after Sol. You can find the minor planet Pluto to the right of Scutum, look for it before dawn. If you're looking for Terra, check under your feet.

Ultraviolet Surprise

Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies the likes of which astronomers on Earth have never seen before?

Now you can. Just point your web browser to galex.stsci.edu and start exploring.

That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet wavelengths that can't be seen from the ground. Earth's atmosphere blocks far-ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

About 65% of the images from the all-sky survey haven't been closely examined by astronomers yet, so there are plenty of surprises waiting to be uncovered.

"The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, an astronomy postdoc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400 years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.

"Mira shows us that even well-observed stars can surprise us if we look at them in a different way and at different frequencies," Seibert says.

Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and discovering his ears are really three times longer than you thought!

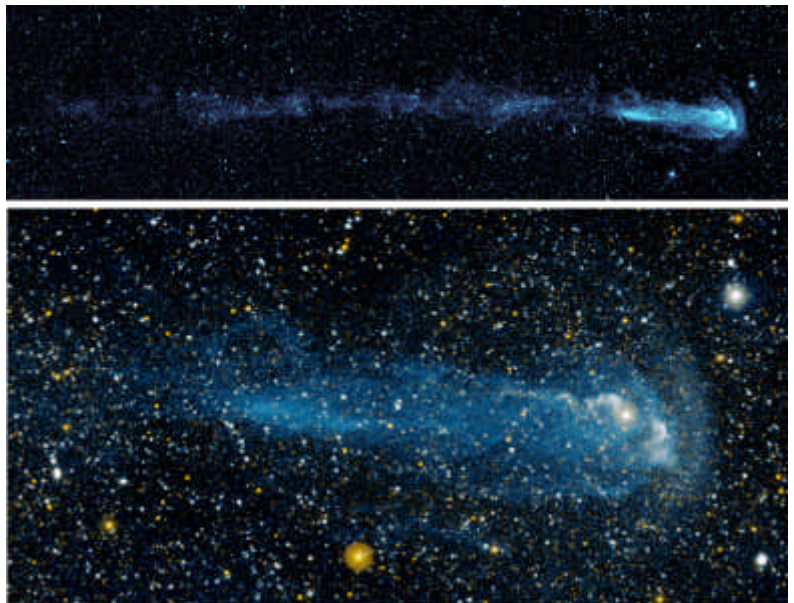
The images from the ultraviolet space telescope are ideal for hunting new phenomena. The telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view. Each image covers 1.2 degrees of sky—lots of territory for the unexpected.

If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

So what are you waiting for? Fire up your web browser and let the discoveries begin!

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

Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.



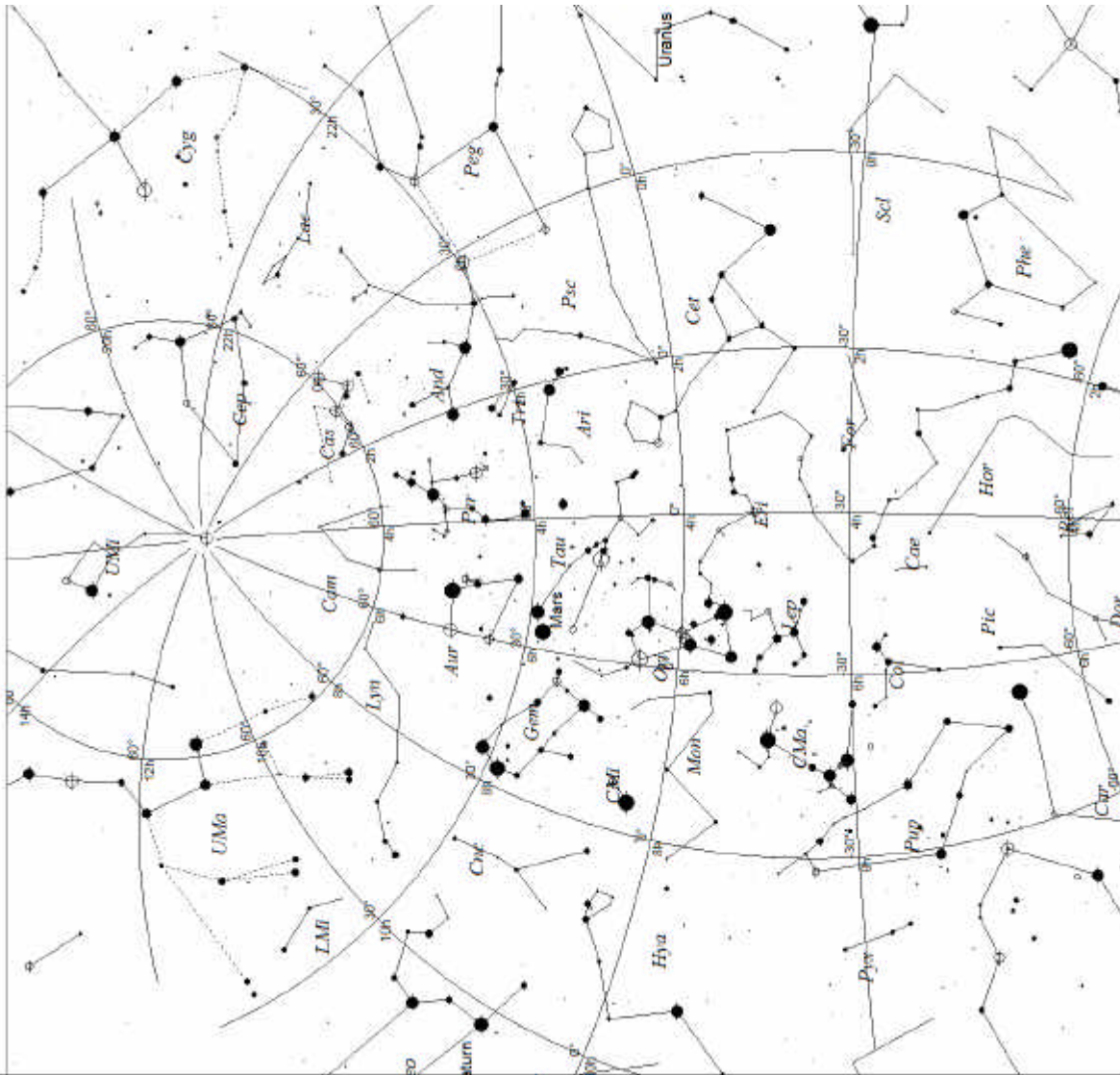
Magazine Subscriptions

As a paid member of DMSG, you can sign up -or- renew your S&T or Astronomy magazines through the club for a discount over private rate. S&T, reg. \$42.95, is \$32.95 thru DMSG, Astronomy, reg. \$44, is \$34 thru DMSG. See Tony Codella for details.

2007 Holiday Party



Skymap 11 Jan 2008 10 PM



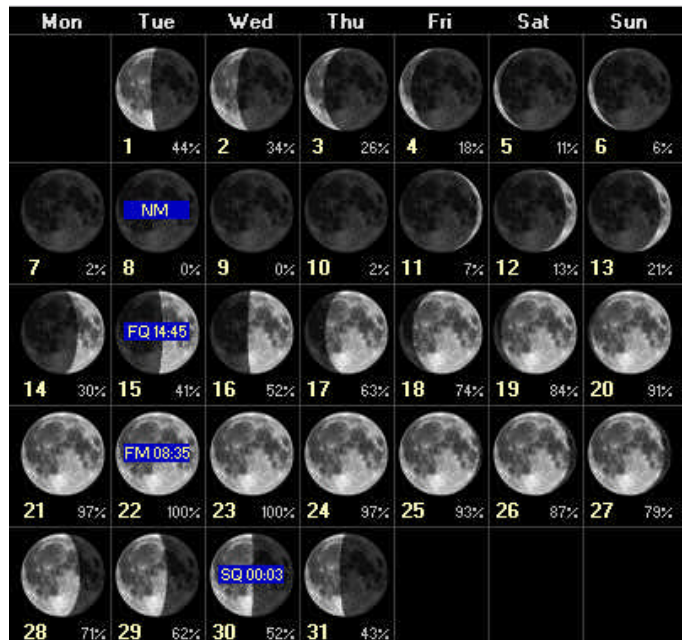
Tuckahoe State Park MD

- STARS**
- <1
 - 1.5
 - 2
 - 2.5
 - >5
 - 3.5
 - 4
 - 4.5
 - >5
- SYMBOLS**
- ◻ Multiple star
 - ◻ Dark nebula
 - ◻ Globular cluster
 - ◻ Open cluster
 - ◻ Planetary nebula
 - ◻ Quasar
 - △ Radio source
 - × X-ray source
 - Other object

Local Time: 22:00:00 11-Jan-2008
 Sidereal Time: 04:20:05
 Location: 38° 56' 0" N 75° 56' 0" W
 RA: 4h20m05s Dec: +23° 57' Field: 180.0°
 UTC: 02:00:00 12-Jan-2008
 Julian Day: 2454477.5833

Sun and Moon Data for January 2008
 Tuckahoe MD
 38.97°N 75.93°W 5hrW
 Standard Time Civil Twilight

Date	Twilight	Rise	Sun Transit	Set	Twilight	Rise	Moon Transit	Set	%
1/1/2008	6:53a	7:23a	12:07p	4:52p	5:22p	1:11a	6:41a	12:03p	37
1/2/2008	6:53a	7:23a	12:08p	4:53p	5:23p	2:11a	7:23a	12:29p	28
1/3/2008	6:53a	7:23a	12:08p	4:54p	5:23p	3:12a	8:08a	12:58p	20
1/4/2008	6:53a	7:23a	12:09p	4:54p	5:24p	4:14a	8:55a	1:33p	13
1/5/2008	6:53a	7:23a	12:09p	4:55p	5:25p	5:14a	9:46a	2:15p	7
1/6/2008	6:53a	7:23a	12:09p	4:56p	5:26p	6:11a	10:38a	3:05p	3
1/7/2008	6:53a	7:23a	12:10p	4:57p	5:27p	7:02a	11:31a	4:04p	1
1/8/2008	6:53a	7:23a	12:10p	4:58p	5:28p	7:46a	12:24p	5:07p	0
1/9/2008	6:53a	7:23a	12:11p	4:59p	5:29p	8:23a	1:15p	6:14p	2
1/10/2008	6:53a	7:22a	12:11p	5:00p	5:30p	8:55a	2:04p	7:22p	5
1/11/2008	6:53a	7:22a	12:12p	5:01p	5:30p	9:23a	2:51p	8:29p	11
1/12/2008	6:53a	7:22a	12:12p	5:02p	5:31p	9:48a	3:37p	9:37p	18
1/13/2008	6:52a	7:22a	12:12p	5:03p	5:32p	10:12a	4:22p	10:45p	27
1/14/2008	6:52a	7:22a	12:13p	5:04p	5:33p	10:36a	5:09p	11:54p	38
1/15/2008	6:52a	7:21a	12:13p	5:05p	5:34p	11:02a	5:58p	****	49
1/16/2008	6:52a	7:21a	12:13p	5:06p	5:35p	11:33a	6:51p	1:06a	60
1/17/2008	6:51a	7:20a	12:14p	5:07p	5:36p	12:10p	7:48p	2:21a	71
1/18/2008	6:51a	7:20a	12:14p	5:08p	5:37p	12:58p	8:50p	3:37a	81
1/19/2008	6:51a	7:20a	12:14p	5:09p	5:39p	1:53p	9:54p	4:40a	89
1/20/2008	6:50a	7:19a	12:15p	5:11p	5:40p	3:00p	10:58p	5:54a	95
1/21/2008	6:50a	7:19a	12:15p	5:12p	5:41p	4:14p	11:58p	6:48a	99
1/22/2008	6:49a	7:18a	12:15p	5:13p	5:42p	5:28p	****	7:31a	100
1/23/2008	6:49a	7:17a	12:15p	5:14p	5:43p	6:41p	12:53a	8:05a	98
1/24/2008	6:48a	7:17a	12:16p	5:15p	5:44p	7:49p	1:43a	8:34a	94
1/25/2008	6:47a	7:16a	12:16p	5:16p	5:45p	8:54p	2:29a	8:58a	89
1/26/2008	6:47a	7:15a	12:16p	5:17p	5:46p	9:57p	3:13a	9:21a	81
1/27/2008	6:46a	7:15a	12:16p	5:19p	5:47p	10:58p	3:54a	9:42a	73
1/28/2008	6:45a	7:14a	12:17p	5:20p	5:48p	11:59p	4:36a	10:05a	64
1/29/2008	6:45a	7:13a	12:17p	5:21p	5:49p	****	5:18a	10:29a	55
1/30/2008	6:44a	7:12a	12:17p	5:22p	5:50p	1:00a	6:02a	10:57a	45
1/31/2008	6:43a	7:11a	12:17p	5:23p	5:51p	2:02a	6:48a	11:29a	36



Moondark for January: What's up for the 366 Nights of 2008?

Doug Miller

As [2008](#) opens, [Mars dominates the night sky](#) as well as the [headlines](#). Visible all night long, this northerly [opposition](#) affords great viewing of the [Red Planet](#) over the coming months. But what else do the days and nights have in store for [star gazers](#)?

January's [New Moon](#) falls on the 8th, the [Full Moon](#) on the 22nd. February starts with a close [conjunction](#) of [Venus](#) and [Jupiter](#) in the morning sky plus an [Annular Eclipse](#) of the Sun on the 7th, unfortunately only visible from the [southern hemisphere](#). In contrast, much of [North America](#) is well placed for the [Total Lunar Eclipse](#) on the evening of the 20th (local time). February has an extra, 29th day this [leap year](#). In [March](#), we [spring forward to daylight time](#) on the 9th, even before the [Equinox](#) on the 20th. The [Full Moon](#) (21st) and [Easter](#) (23rd) follow soon after. The club's [Star Gaze XIV Star Party](#) runs from [April 2nd](#) through the [New Moon](#) on the 6th. Star party attendees will enjoy four of the five bright, [ancient planets](#) if they stay up all night. Be sure to check out [Saturn](#), its rings are at nearly maximum tilt on the 30th.

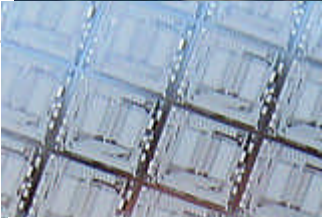
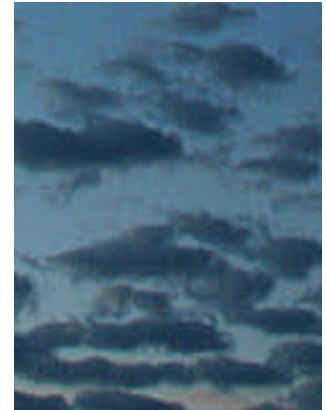
May's [New Moon](#) falls on the 5th, the [Full Moon](#) on the 20th. June has a Friday the 13th, and a [Full Moon](#) on the 18th is actually the fourth of the season, making it a [Blue Moon](#), according to the [original definition](#). The [Solstice](#) on the 20th marks the start of [our Summer](#), and Pluto is at opposition on the same date. Jupiter reaches opposition of the 9th of [July](#), while Mars and Saturn have a close conjunction: enjoy the sight of both planetary disks in a single eyepiece field of view. [August](#) has two [New Moons](#) (the first on the 1st is a [Total Solar Eclipse](#)) and fairly favorable conditions for the [Perseid meteor shower](#). [Full Moon](#) on the 16th passes into [Partial Lunar Eclipse](#), although neither of August's eclipses is visible from [Delmarva](#).

Venus, Mars and [Mercury](#) dance in the evening twilight at the start of [September](#), but by the [No Frills XIII Star Party](#) on the 24th through 28th only Venus will still be visible. The [Equinox](#) occurs on the 22nd, the next [New Moon](#) falls on the 29th. Aside from the [Full Harvest Moon](#) on [October 14th](#), nothing much happens in that month. We [fall back from daylight time](#) on [November 2nd](#). Viewing the [Leonid shower](#) with a past-full (13th) gibbous moon is particularly unfavorable this year. [December](#) opens with a dramatic conjunction of Venus and Jupiter joined by the crescent moon on the 1st. Days grow longer after the [Solstice](#) on the 21st, and the last [New Moon](#) of the year occurs on the 27th. Alas, after a banner start and favorable viewing through much of the year, Mars is now invisibly lost in the glare of the [Sun](#).

[Full Moons](#) start the year in the latter half of the month and advance about a day per month throughout year. For [deep-sky aficionados](#), this means that the best observing—without interference from moonlight—falls either in the first week (January through June) or the last week (July-December) of the month. Gazers anticipating the [Messier Marathon](#), attempting to see all M-objects in one night, [get two opportunities](#): around the 8th of March (9.4 h of deep night) or on the last weekend (29th, 6.2 h). June closes on the 30th with the shortest night without a moon, only 5.1 hours, while the longest deep night, 11.4 hours, comes right in time for Christmas, 2008.

The [web has many resources](#) and sites for planning this year's observing: for [sky events](#) and [planetary phenomena](#), [all about eclipses](#), and [moon phases, rises and sets](#) for your backyard, [Tuckahoe](#), and the rest of the world. Check regularly [our club's Yahoo! discussion group](#) and [Spaceweather.com](#) for upcoming events and the latest in celestial news.

Dates for local circumstances are [Universal Times \(UT\)](#) at Tuckahoe State Park, the [Delmarva Star Gazers dark sky site](#). A customized [deep night table](#) and a [moon phase calendar](#) usable through 2009 are also available. Additional information can be found in [Guy Ottewell's Astronomical Calendar 2008](#). *Moondark* is written by Doug Miller, published at the [Moondark web site](#), and printed in the [Delmarva Star Gazers' Star Gazer News](#). This document was last revised on 29 December 2007. Text and images on this web page are free for non-commercial use with attribution under a [Creative Commons Attribution-Non-commercial 3.0 License](#). Ask Doug about other uses.



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on? Moondark
Wilson My my nativ
ealand Night

