

STAR GAZER NEWS

NEWSLETTER OF THE DELMARVA STARGAZERS

April 2005

WWW.DelmarvaStarGazers.Org

Volume 11 Number 10

At the March Meeting.....

by Jerry Truitt

President Don Surles opened the March meeting with an update on the health situations of some of our members.

Don was scheduled to meet Billy Westerguard on Monday, however due to weather conditions the meeting did not take place. Billy and Don are working on obtaining ground for an observatory in Black Bird State Forest. Don explained some of the things that would have to take place for this observatory to become a reality. A new separate organization would need to be formed for the observatory. The public would not only need to support it, we would need to find public funding in some form.

This evolved into a discussion about the status of Tuckahoe. The ranger super-intendent has not been friendly towards us lately, but we don't know why. Members indicated that even if the Black Bird site comes to pass, we still don't want to lose our ties to Tuckahoe. Everyone agreed that we need to reestablish a good relationship with Tuckahoe now.

The Mirror Making V team gave a report that everything is a go for the event. We have a balance of new grinders and finishers from past years.

Outreach Friday March 18

Keith Lohmeyer, Leonard White and Jerry Truitt went to North County Library in Greensboro, MD with telescopes in tow. After short presentations from JPL Planet Quest, we gave a presentation on the Moon and solar system. Then the participants were sent out to the scopes and binoculars. Observed were the Moon, Saturn and finally Jupiter. A detailed account is on the DMSG Yahoo Pages of Saturday March 19.

Programs- The first presentation of the evening was Doug Norton on double stars. Doug's Power Point presentation listed the top ten doubles and he talked to us about his personal experience with each group. He talked about how much power you need to split them, their separation and colors. Doug also listed and talked about what he

Monthly Meeting, Tuesday, April 5

Packing for Observing..... Doug Norton
Comets..... Tim Milligan
Building the Space Shuttle...Michael Borgia
Available Observing Sites.... Keith Lohmeyer
Monthly Sky Chart.....Group
7:00 p.m. First Presbyterian Church, Smyrna

considers the top ten best neglected doubles. Doug next reviewed with us the top astronomical events of the year 1976.

We were treated next to a detailed presentation on telescope design by Michael Borgia. Mike covered each design type and the plus and minus of each one along with some history of the design.

Jerry Truitt gave his NASA update which included an animated artist concept of the largest Gamma Ray Burst in history recorded recently by the Swift satellite. The animation illustrated how this event reached Earth and what resulted, as well as showing what scientist believe was the actual cause of the event, a magnastar burst and pulsations. We were also treated to pictures from Cassini of Saturn's rings and the moons Encladus and Titan. Jerry closed with the latest animated images from Spitzer Space Telescope of M57 and

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the Trifid Nebula.

Don next covered how, when and where to do a Messier Marathon. He noted you need to plan ahead, dress in layers, have food, drinks and be ready to dig in for a long night. You need to plan what objects to look at first and last and in what

order. Practice on these items before you attempt the marathon.

The club is going to get together at Tuckahoe on the 18th and attempt the marathon. Come join us! We finished the meeting with Keith Lohmeyer showing us his Dobsonian telescope. Keith's large aperture Dobsonian scope has many features anyone could incorporate into their telescope.

From the President's Desk...

March 18, 2005

Two days 'til Spring! These past few weeks have been the "revenge of the groundhog". I am predicting a beautiful Spring with 70F days and 50F nights...make that CLEAR 50F nights! Clean your eyepieces! Collimate your scopes! And get some real star charts cause you are gonna need 'em.

Have you noticed the string of beautiful days that are followed by cloudy sunsets and cloudy nights? I predict the tether between the setting Sun and those clouds will dissolve and our nights will become clear...not sure what will happen to the clear days though.

We recently completed our Mirror Makers' Weekend #5 – and did so with class and very successfully! Thanks to all who contributed their time and talents that ensured a great time for all and the ultimate success. I know I will miss someone but here is my sincere thanks to Karen Surlles and Kathy Sheldon (great food), Jerry Truitt, Dave Groski, Bill Hannagan, and Lyle Jones (organizing the event), Bill McKibben, Paul Riley, Steve Swayze, and I am sure I missed someone...but again, Thanks to all who made MMM#5 a huge success.

I must tell you about the St Jones Reserve facilities...they are very, very nice and spacious. Your tax dollars are at work and you should check out your property. There may be future opportunities for us to use the facilities for other astronomy related activities. The view of the night sky and it's treasures from the boardwalk thru the marsh was impressive – it was very cold, clear, and the mosquitoes did not have warm jackets so they stayed inside whilst I watched the sky. The situation will probably change around late April to early May.

The hex on my 10" Meade Schmidt-Newtonian continues. Doug Norton and I went down to Tuckahoe Saturday night, March 12. This was supposed to be our Messier Marathon weekend

but Doug and I only saw a few M-objects before the all-too-familiar all-sky nebula hid everything. Shortly after we arrived and set up our scopes the skies zipped up – half way. After a few minutes of fiddling around with collimation and comet-shaped stars, the sky completely clouded over. So, if anyone knows how, or knows someone who knows how to exorcise a scope please feel free to offer the service. If we cannot lift the curse then maybe it will have to be sacrificed. I have owned a lot of scopes over the years but this one was purchased new for photography and so far I have not taken the first image with it (it has been three years...).

It is almost time for our Eleventh Delmarva Stargaze! Can you believe it? Mark your calendars for April 8, 9, & 10; those are the dates for us to assemble at the Tuckahoe Equestrian Center and pay homage to our underused scopes and the probably unfamiliar skies of Springtime on Delmarva. Come and participate in eating, swapping stories, presentations in the barn, and telling lies about the best observing sites or how much power was used to view Saturn. It's gonna be a great time so come on down and join the fun. Oh, if you haven't filed your income tax returns please do so...George & Dick need your money and filing will relieve stress so that you can enjoy DSG XI.

Our next meeting is April 5th and we have a great program lined up. Here is the lineup:

Packing for a Night of Successful Observing	Doug Norton
Comets	Tim Milligan
Building the Space Shuttle	Michael Borgia
Observing Sites Available to DSG	Keith Lohmeyer
S&T Monthly Sky Chart	Jerry Truitt & the Group

See you at the Church; gates open at 6:30 PM. Come and enjoy the meeting. Today is the day I return the snowblower to its non-snow season resting place and retrieve the rototiller and lawnmower. OI Sol and Mother Nature are combining to bring springtime temps and lots of sunlight so it is time to make the switch. It is also time to stand back and watch Mother Nature wrap herself in Her beautiful springtime colors. You can probably tell this is my favorite time of the year. I have always equated springtime

with renewal, beginning, optimism, commencement, growth, and a promise of a great harvest later. Just a little left over country boy poking through this late March morning.

Get outside and enjoy our springtime. You deserve it and may the groundhog be pacified; he needs to be fed and kept in the shade. See you at the Church on April 5 and at the Equestrian Center April 8, 9, & 10.

Don

The Sky in April

This month brings us warmer, but shorter, nights. Good news - bad news! Jupiter is at opposition in early April, but is also at aphelion (farthest from the Sun). It will be the smallest possible, yet still a good object to 'focus' on. Just before 1 AM EDT on April 9th, three of the Galileo moons will be very close together with Ganymede not far away. Jupiter is hanging out in Virgo. While you're looking at Jupiter, you might as well look for the 10 Messier objects between Virgo and Leo. Saturn is also high in the sky in Gemini. There's more Messier objects to find near Gemini and the neighbor, Auriga.

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 annual meeting dates for 2005 are: January 4, February 1, March 1, April 5, May 3, June 7, July 2 Picnic, August 2 No inside meeting; event to be scheduled, September 6, October 4, November 1 and December 6 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 2005 are:

January 7-8, February 11-12, March 11-12 **April 8-10 (Stargaze XI)**, May 6-7, June 3-4, July 8-9 August 5-6, September 2-3, **September 28-October 2 (No Frills X)**, October 28-29, November 4-5 and December 2-3.

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.

Other Events for 2005

March 4-6 Mid-Atlantic Mirror Making #5

July 2 July 4 th picnic

December 10 Christmas Party

Delmarva Star Gazer Officers 2004-2005

President.....Don Surles 302 653 9445

Vice President.....Jerry Truitt 410 885-3327

Secretary.....Paul Riley 302 738-5366

Treasurer.....Kathy Sheldon 302 422 4695

Member Magazine Subscriptions

Just a reminder -- As an added bonus to your **PAID** membership in the Delmarva Stargazers, you can get the club discount on your favorite astronomy magazines, **Sky and Telescope** -or- **Astronomy**. You can save \$10 -or- more! For more info on a subscription (or renewal) please contact PJ Riley at plr127@yahoo.com

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

NAME _____

ADDRESS _____

CITY, STATE & ZIP _____

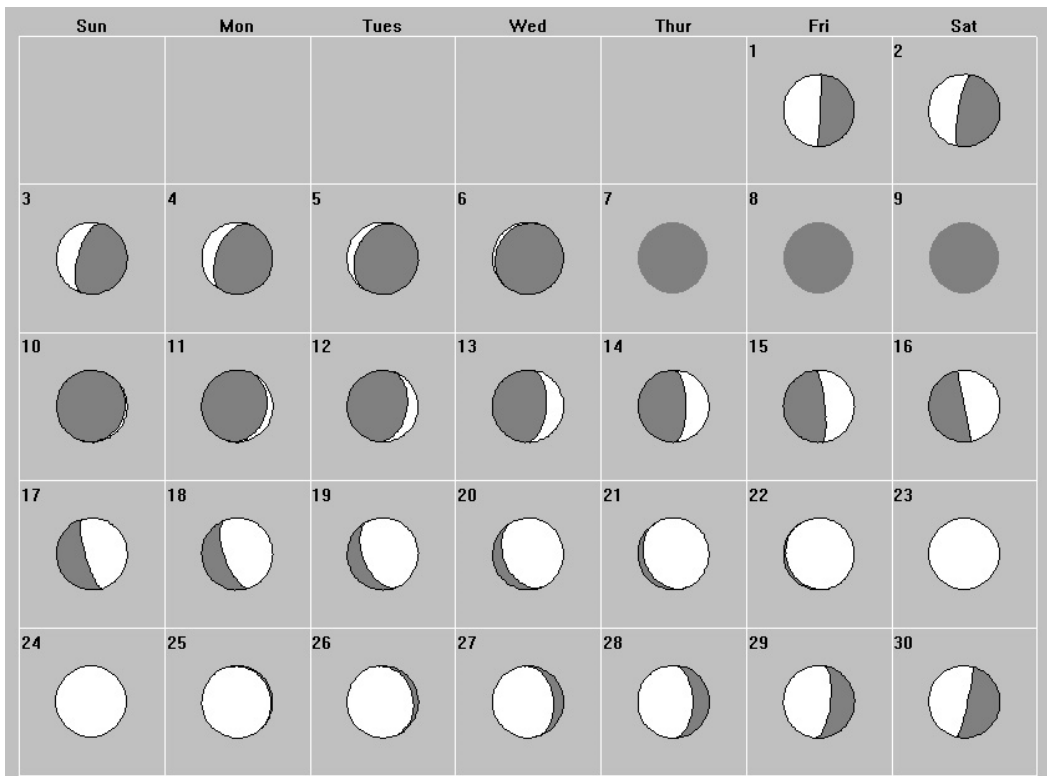
E-MAIL ADDRESS (If any) _____

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 information.

Sun and Moon Data for April 2005 Tuckahoe MD

38.98°N 75.93°W 5hrW Daylight Time Astronomical Twilight

Date	Sun				Moon				%
	Twil.	Rise	Transit	Set	Twil.	Rise	Transit	Set	
4/1/2005	5:17a	6:48a	1:07p	7:28p	8:59p	2:16a	6:42a	11:09a	54
4/2/2005	5:15a	6:47a	1:07p	7:29p	9:00p	3:15a	7:45a	12:18p	43
4/3/2005	5:13a	6:45a	1:07p	7:29p	9:01p	4:04a	8:45a	1:33p	32
4/4/2005	5:12a	6:43a	1:07p	7:30p	9:03p	4:44a	9:42a	2:49p	21
4/5/2005	5:10a	6:42a	1:06p	7:31p	9:04p	5:16a	10:35a	4:04p	13
4/6/2005	5:08a	6:40a	1:06p	7:32p	9:05p	5:44a	11:25a	5:17p	6
4/7/2005	5:06a	6:39a	1:06p	7:33p	9:06p	6:09a	12:13p	6:27p	2
4/8/2005	5:04a	6:37a	1:05p	7:34p	9:08p	6:33a	12:59p	7:37p	0
4/9/2005	5:03a	6:36a	1:05p	7:35p	9:09p	6:58a	1:46p	8:46p	1
4/10/2005	5:01a	6:34a	1:05p	7:36p	9:10p	7:25a	2:34p	9:55p	4
4/11/2005	4:59a	6:33a	1:05p	7:37p	9:11p	7:55a	3:24p	11:03p	9
4/12/2005	4:57a	6:31a	1:04p	7:38p	9:13p	8:30a	4:15p	*****	15
4/13/2005	4:55a	6:30a	1:04p	7:39p	9:14p	9:12a	5:08p	12:08a	23
4/14/2005	4:54a	6:28a	1:04p	7:40p	9:15p	10:01a	6:01p	1:07a	32
4/15/2005	4:52a	6:27a	1:04p	7:41p	9:16p	10:55a	6:52p	1:59a	41
4/16/2005	4:50a	6:25a	1:03p	7:42p	9:18p	11:54a	7:42p	2:44a	51
4/17/2005	4:48a	6:24a	1:03p	7:43p	9:19p	12:56p	8:29p	3:20a	60
4/18/2005	4:47a	6:23a	1:03p	7:44p	9:20p	1:58p	9:13p	3:51a	69
4/19/2005	4:45a	6:21a	1:03p	7:45p	9:22p	3:01p	9:56p	4:18a	78
4/20/2005	4:43a	6:20a	1:03p	7:46p	9:23p	4:03p	10:38p	4:41a	85
4/21/2005	4:41a	6:18a	1:02p	7:47p	9:24p	5:06p	11:21p	5:03a	92
4/22/2005	4:40a	6:17a	1:02p	7:48p	9:26p	6:10p	*****	5:25a	96
4/23/2005	4:38a	6:16a	1:02p	7:49p	9:27p	7:18p	12:04a	5:48a	99
4/24/2005	4:36a	6:14a	1:02p	7:50p	9:29p	8:28p	12:50a	6:14a	100
4/25/2005	4:34a	6:13a	1:02p	7:51p	9:30p	9:42p	1:40a	6:43a	98
4/26/2005	4:33a	6:12a	1:01p	7:52p	9:31p	10:57p	2:34a	7:20a	94
4/27/2005	4:31a	6:11a	1:01p	7:53p	9:33p	*****	3:33a	8:05a	87
4/28/2005	4:29a	6:09a	1:01p	7:54p	9:34p	12:08a	4:35a	9:02a	78
4/29/2005	4:28a	6:08a	1:01p	7:55p	9:35p	1:11a	5:39a	10:09a	68
4/30/2005	4:26a	6:07a	1:01p	7:56p	9:37p	2:03a	6:40a	11:23a	57



Clear Aperture Reflectors

The following thread of E-mails began when James Morgan posted to the Yahoo Pages after receiving his latest copy of the Orion Telescope Catalog:

From James T. Morgan

Well, the Orion catalog came in with a note about a new Clear-Aperture Reflector being available. Sure enough, right smack on the catalog cover is this scope. Of course the smaller print lists the price at \$999 which I found to be asking a lot for a scope of such small aperture. I like the idea of it and it would be nice to take a peek through it but at that price, it is way beyond my means. James

From Michael P. Borgia

What is interesting about the design is that the optical tube is much larger in diameter than the primary mirror, this is how the secondary housing is able to reside outside the light path. The other unusual feature of this particular telescope is that it is of unusually long focal length. At F 13.6, it would be very frustrating to do any astrophotography with it. The telescope also weighs in at 48.8 pounds fully assembled, which is heavier than a fully assembled C-8 or many larger Dobsonians. Just not worth the price or work for a 3.6 inch telescope. Give me the aperture with the central obstruction any day. Michael

From Bob Bunge

It's possible to build a similar scope at pretty low cost if you build the OTA yourself. Here is a 4.25-inch f/10 scope with an optical window: <http://www.ladyandtramp.com/4-inch/> I built this one for the 1988 Mars opposition and used Edmund optics, but I believe these days you can get the optical window from Apogee for not that much. I used a 1/2-inch secondary, but 3/4-inch would work very well. Dick Suitor and others believe more diffraction comes from the spider than the central obstruction when you get to very small percentages (say below 20%). One hint is to get a spherical mirror. A smoother surface is important... and at this aperture and F ratio, the correction adds little quality. While many of you are used to seeing my 20-inch at TSP, this 4-inch is perhaps my most used telescope, as it's my primary planetary scope. I used it in 2003 to make a number of drawings of Mars. Bob

From Douglas A. Norton

Sky & Tel has a review of the scope in the April issue. There was a lot of debate about who this scope is for. Very simply, for those who want to observe the moon, bright planets and double stars and nothing else (save maybe the sun) with the ultimate contrast, no color fringing and no obstruction. It is considerably cheaper than a high quality refractor of equal aperture (just look at those Tele Vue's!) and in the review it outperformed a \$4,000 Questar. So this is a niche scope for a very specific type of observing. I am not defending the small aperture or the price. But understand someone out there has a use for this scope that performed superbly in the Sky & Tel review. Doug

From Paul Gray

Doug and all, I agree this is a niche scope. IF you got money to blow then go for it, if you want another scope in your collection. It might be very good for planetary and lunar imaging and viewing, but you can get views just as good with other scopes that are more versatile. For example, my 12.5" F5 Dob has an excellent mirror but rarely can I use it on the planets at full aperture due to poor seeing. An aperture mask though, that allows a 3.5 inch aperture centre off the secondary and focus and between the spider vanes, permits me to have a 3.5 inch clear aperture at F17.8. Doug will tell you how good this can be. To boot, I still have a large Dob too. Paul G

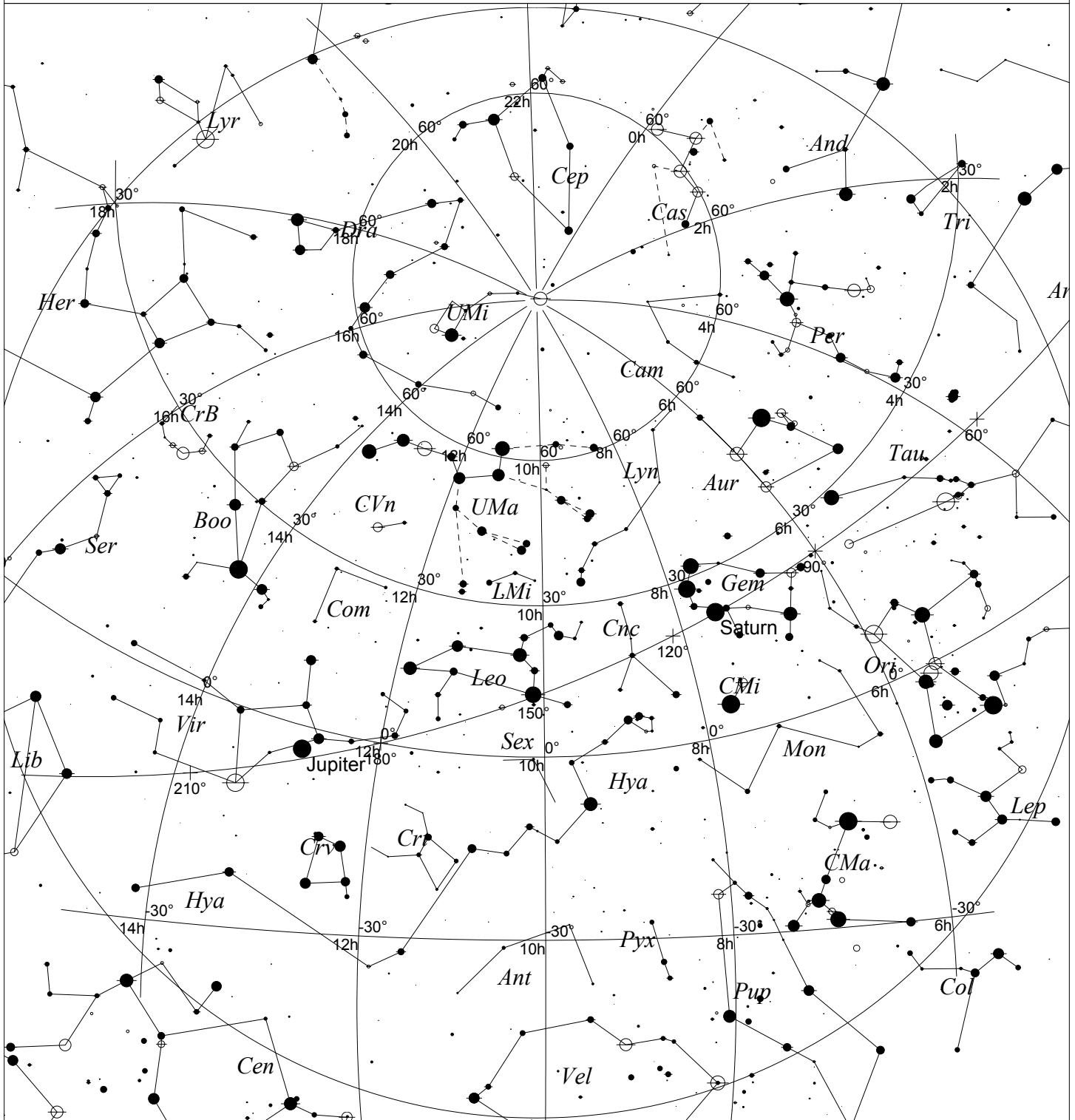
From Dave Groski

Paul, I agree also. I just stop down my 13.1" Coulter to get some pretty good planetary images. Better yet, come to the Mirror Making Class and make a set of Schiefspiegler 4.25" optics that a few of us will be making. Bill Cheng will have his completed 'scope there and one look through it will show you how excellent it is on the planets, moon and double stars. Dave

Mirror Making Workshop 2005



SKYMAP FOR APRIL 2005



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, MD
APRIL 9, 2005

Local Time: 22:00:00 9-Apr-2005

UTC: 02:00:00 10-Apr-2005

Sidereal Time: 10:05:53

Location: 38° 58' 0" N 76° 56' 0" W RA: 10h05m53s Dec: +38° 57' Field: 182.0°

Julian Day: 2453470.5833

Moondark for April: Happy Birthday, Dr. E

This year marks the centennial of [Albert Einstein's](#) miraculous year: in 1905, he published three milestone papers in atomic theory, photoelectric phenomena and [special relativity](#). Just this past month, on March 14th of the [World Year of Physics](#), we celebrated Einstein's [126th birthday](#). Theorists do seem to get all the credit, however, and given his [iconic status](#), you might think that [Einstein](#) solved every problem by himself. But Einstein was just one of many in physics' "golden age" early in the 20th century. And while these other physicists have not become caricatures of genius, they were no less vital to the advancement of the science.

One such figure is Ernest Rutherford, [born in 1871](#) near Nelson on the South Island of New Zealand. As a child he tinkered around the family farms and flax mills in the beautiful [Marlborough](#) Sound region. From 1890 through 1894, "Ern" attended [Canterbury College](#) in Christchurch where he earned three degrees. Then in 1895, Rutherford left New Zealand for [Cavendish Laboratory](#) at Cambridge in England. There, [J.J. Thompson](#), the discoverer of the electron, invited him to turn to more basic research, and soon thereafter, [Rutherford](#) began the study of radioactivity. This [work continued](#) in Montreal at [McGill University](#) where he discovered [two types of radioactive rays](#). In 1908, before his 40th birthday, he received the [Noble Prize in Chemistry](#) for his "investigations into the disintegration of the elements and the chemical properties of radioactive substances."

Rutherford's greatest work was yet to come. [Back in England](#) at the [University of Manchester](#), Rutherford and [Hans Geiger](#) showed that alpha rays pass through gold foil with little deviation, except that rarely--[perhaps once in several thousand](#)--they are scattered widely, [even reflecting backwards](#). "[It was as if you fired a 15-inch shell at a sheet of tissue paper and it came back to hit you.](#)" Rutherford had a booming voice, and often remarked that "swearing will make an experiment work better." A [key insight just before Christmas 1910](#), that alpha rays were tiny particles which [are scattered](#) by the dense, central concentration of mass and charge, led to a [revolutionary model of atomic structure](#) in which a [nucleus containing virtually all the mass is surrounded by electrons which occupy all the space](#). Atoms are mostly empty space.

Remarkably, the significance of this discovery was scarcely appreciated at the time, even by Rutherford himself. His research continued, and in 1918, Rutherford became the first successful alchemist, using alpha particles to [change nitrogen into oxygen](#). As an elder statesman of physics, Rutherford returned to direct the [Cavendish Laboratory](#), and he became [Baron Rutherford of Nelson](#) in 1931. His [ashes are interred](#) in [Westminster Abbey](#) in London near Lord Kelvin and Isaac Newton.

Despite tremendous advancements, physicists still work on big, unanswered questions. Today, unlike the "golden era," you can *participate* in that scientific discovery. [Einstein@Home](#) is a distributed computing project that employs your idle computer in the search for pulsars using data from the [LIGO interferometers](#). Registered users will be given [partial credit](#) for any discoveries made with their computer. Still in its [ramp-up phase](#), eventually computers [all over the world](#) will be engaged in the search for [gravity waves](#). And even if you fall short of rewriting the textbooks like Einstein and Rutherford, you get something they never imagined: an attractive [rotating sky globe screen saver](#). Then again, 100 years from now *you* might be remembered as a co-discoverer of gravity waves!

As I write this, [BOINC](#) is looking for pulsars on two, ancient Windows computers in my study. In the meantime, Google searches for either Einstein or [Rutherford](#) will return heaps of information. In addition, I found these books to be useful: R.P. Crease's [The Prism and the Pendulum](#), I. James' [Remarkable Physicists](#), M. Oliphant's [Rutherford - Recollections of the Cambridge Days](#), and D. Wilson's [Rutherford](#). [Moondark](#) is written by [Doug Miller](#), published [online](#), and printed in the [Delmarva Star Gazers' Star Gazer News](#). Last revised on 21 March 2005, the text and images are copyright © 2005 by Douglas C. Miller, All Rights Reserved. This material may not be reproduced in any form without prior permission.



"Ern" is honored on the [New Zealand \\$100 note](#).



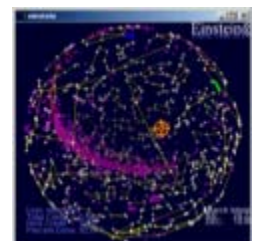
Rutherford's schoolhouse is now the [youth hostel](#) in the town of Havelock, ...



...today the center of [greenshell mussel farming](#) and the famous [Mussel Boys Restaurant](#).



Canterbury College is now a thriving [arts centre](#).



Catch a pulsar? The [BOINC screen saver](#)