Observations

A Monthly Publication Of The CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 20, No. 7 *Two-Time Winner of the Astronomical League's Mabel Sterns Award ¤ 2006 & 2009* *July 2012*

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07/2012	Calobrisi & Family Hockenberry-Miller
08/2012	Bullard Knabb & Family Lurcott, L.
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Chasing the Transit of Venus!

See pg. 6 for CCAS members' experience "chasing" the transit

Important June 2012 Dates

3rd • Full Moon, 2:52 p.m.

10th • Last Quarter Moon, 9:48 p.m.

19th • New Moon, 12:24 a.m.

26th • First Quarter Moon, 4:56 a.m.

29th • Delta Aquarid Meteor Shower Peaks.

CCAS Upcoming Nights Out

CCAS has several "nights out" scheduled over the next few months. Members are encouraged to help out during these events any way they can. See below for more information.

¤ **Friday, August 24th** at the Delaware Museum of Natural History. As part of the exhibit called Earth from Space, we will host a Star Party to show visitors Earth from space as well as a "space from Earth" perspective.

¤ **Friday, September 14th** at Longwood Gardens. As part of the Family Light Night series, from 5 to 9 p.m., we'll do some solar observing early in the program.

Summer 2012 Society Events

July 2012

11th • PA Outdoor Lighting Council monthly meeting, 1438 Shaner Drive, Pottstown, PA 19465, starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the PA Outdoor Lighting Council website.

14th • CCAS Summer Party at Barb & Don Knabb's home in West Chester, PA. The party is for CCAS members and their families starting at 6:00 p.m. See pg. 14 for more details about the party and for directions to Barb & Don's home.

17th-19th • Conference: X-ray Binaries - Celebrating 50 years since the Discovery of Sco X-1, Boston, Massachusetts.

20th • Open call for articles and photographs for the August 2012 edition of Observations.

20th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date July 21st). The observing session starts at sunset.

26th • Deadline for newsletter submissions for the August 2012 edition of Observations.

August 2012

1st • PA Outdoor Lighting Council monthly meeting, 1438 Shaner Drive, Pottstown, PA 19465, starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the PA Outdoor Lighting Council website.

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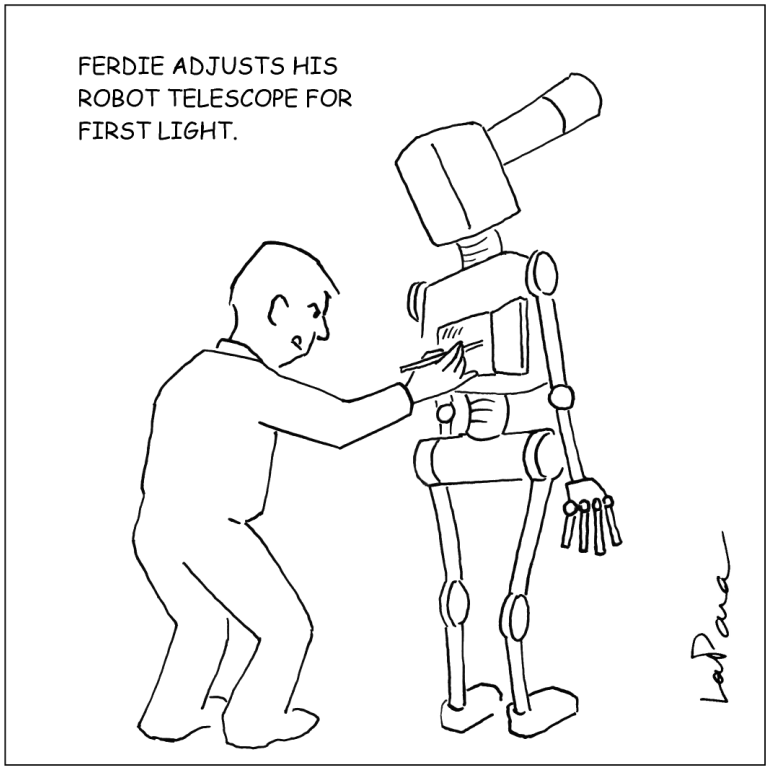
Transit Images from the Internet

by member John Imburgia

The weather was not good to view the Transit of Venus were I live, so I got on the website of NASA EDGE USTREAM (http://www.ustream.tv/nasaedge). This NASA website was very knowledgeable with Astronomers in Hawaii explaining items in detail. I watched it from 6pm to 10pm. Here are photos that I took with my Nikon D700 camera of the transit on my computer. You can see the sun spots and if you look at the left photo to the very bottom you will notice a faint prominence that just appeared. The astronomers broadcasting were just thrilled about it.

Nicholas's Humor Corner

by Nicholas La Para



September 2012 Guest Speaker

by Dave Hockenberry, CCAS Program Chair

CCAS Guest Speaker Derrick Pitts

Our next meeting will be held on September 11, 2012, starting at 7:30 p.m. The meeting will be held in Room 113, Merion Science Center (former Boucher Building), West Chester University. Our guest speaker will be Derrick Pitts, PhD, chief astronomer at the Franklin Institute. More information is forthcoming in later *Observations.*

Please note that inclement weather or changes in speakers' schedules may affect the program. In the event there is a change, CCAS members will be notified via e-mail with as much advance notice as possible.

We are looking for presenters for

(Continued on page 14)

CCAS Original Astrophotography

by Dave Hockenberry

M17, the Swan Nebula in Saggitarius. Also knows as the Omega, Lobster, and Checkmark Nebula. Shot 6/16/12 with QSI 583 wsg camera through AstroTech AT8RC telescope at 1625 mm Focal Length. Autoguided with SX Lodestar camera through SX Adaptive Optics Guider. Image capture with MaxIm DL5. Images calibrated, hot pixel removal, stacked, and DDP adjusted in CCDStacck. Luminance stack deconvolved and RGB merge also in CCDStack. L to RGB merge and other adjustments in Photoshop CS3. 60 minutes Luminance, 35 minutes each R, G, and B through AstroDon filters. Sky background noise reduction with Noise Ninja. M17 is aproximately 5 to 6,000 light years distant, and is a favorite of both astrophotographers and visual observers in the Summer sky.

The Passing of a Giant

by John Hepler

Ray Bradbury (1920-2012)

Somehow it seemed fitting that my favorite childhood author should pass right after the Transit of Venus. I credit Ray Bradbury with introducing me to worlds I never dreamed could exist, and I seriously doubt I would be where I am today if I had not discovered his novels and short stories. To this day, *The Martian Chronicles* remains one of my favorite reads.

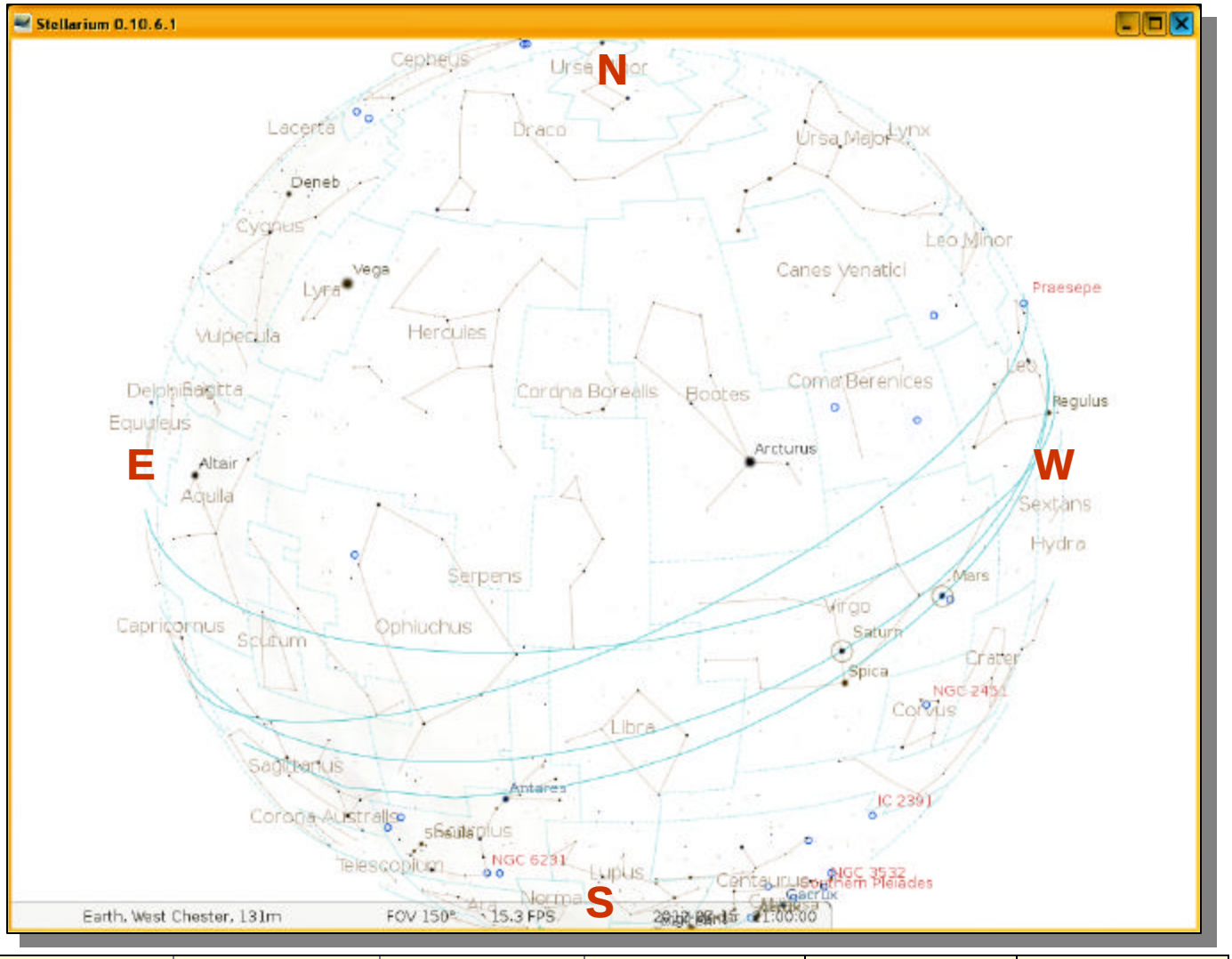
I've included a poem he wrote, "If Only We had Taller Been," on pg. 8 and a link to a wonderful JPL clip filmed in 1971 where he recites a variation on it. Most tellingly, as he reads, fellow panelists Carl Sagan and Arthur C. Clarke appear as entertained as the rest of the audience.

As I watched the planet Venus pass between the sun and earth, I thought of his short story, "All Summer in a Day." I think he would have liked that his story stayed with me all these years.

The Sky Over Chester County

July 15, 2012 at 9:00 p.m. ET

Note: This screen capture is taken from Stellarium, the free planetarium software available for download at www.stellarium.org.



Date	Civil Twilight Begins	Sunrise	Sunset	Civil Twilight Ends	Length of Day
07/01/2012	5:03 a.m. EDT	5:36 a.m. EDT	8:33 p.m. EDT	9:06 p.m. EDT	14h 57m 12s
07/15/2012	5:13 a.m. EDT	5:45 a.m. EDT	8:28 p.m. EDT	9:00 p.m. EDT	14h 43m 03s
07/31/2012	5:28 a.m. EDT	5:59 a.m. EDT	8:15 p.m. EDT	8:45 p.m. EDT	14h 16m 05s

Moon Phases					
First Quarter	07/26/2012	4:56 a.m. EDT	Last Quarter	07/10/2012	9:48 p.m. EDT
Full Moon	07/03/2012	2:52 p.m. EDT	New Moon	07/19/2012	12:24 a.m. EDT

July 2012 Observing Highlights

by Don Knabb, CCAS Treasurer & Observing Chair

July 3	Full Moon, 2:52 p.m.
July 10	Last Quarter Moon, 9:48 p.m.
July 12	Venus shines at its brightest in the morning sky
July 15	The waning crescent Moon lies between Venus and Jupiter in the morning sky
July 19	New Moon, 12:24 a.m.
July 24	The Moon is near Mars
July 25	The Moon is near Saturn
July 26	First-quarter Moon, 4:56 a.m.

The best sights this month: Mars and Saturn continue to provide a nice show during July and it will be interesting to watch the gap between these planets close throughout the month. If you are willing to get up a bit before 5:00 a.m. there will be a beautiful grouping of Venus, Jupiter, the Pleiades, Aldebaran and the Moon in the pre-dawn sky on July 15th.

Mercury: Look for Mercury about 45 minutes after sunset during the first few days of July. After that it will be too close to the Sun to be seen.

Venus: At the middle of the month there is a great show in the pre-dawn sky with Venus, Jupiter and the Moon putting on a beautiful show as mentioned above. If you are willing to get up early you will have a beautiful view in the eastern sky!

Mars: The red planet continues to shrink is size in the eyepiece of a telescope as we pull ahead of it in our orbit around the Sun. Do you remember how much fun it was to watch Jupiter and Venus come close together in the evening sky this spring? Well now we get to watch Mars and Saturn do a similar dance. They start July about 24 degrees apart and end the month only 8 degrees apart. It gets even better in mid-August when Mars will pass between Saturn and Spica!

Jupiter: Jupiter is an early morning planet for the next several months, shining brightly in the pre-dawn sky. During the first half of the month Jupiter is fairly close to Venus, but the two become more distant from each other as the month draws to a close.

Saturn: Saturn continues to hang out with Spica in the southern sky making it easy to find as soon as the sky darkens. Almost any size telescope will allow you to see the beautiful ring structure, so set up a telescope on a warm July evening and take a long look at one of the most beautiful objects you will ever see in the night sky.

Uranus and Neptune: These gas giants will be inhabitants of the early morning sky for several months. They can be found using the sky maps at skypub.com, the website of Sky and Telescope magazine.

The Moon: The Moon is full on July 3d. Native Americans called this the Full Buck Moon because July is normally the month when the new antlers of buck deer push out of their foreheads with coatings of velvety fur. It was also often called the Full Thunder Moon, since thunderstorms are most frequent during this time of year.

Constellations: Ah, the warm July nights! Settle back in a lounge chair on a clear July night and enjoy the wonderful stars of summer! In the west is bright Arcturus in Boötes with the beautiful Corona Borealis, the Northern Crown, just to its east. Then we pass through Hercules to the Summer Triangle with the Milky Way filling the spaces within the triangle. Lean back with a pair of binoculars and gaze into the triangle and you will see hundreds of stars in your eyes! It just doesn't get any better than this!

Messier/deep sky: While the southern constellations of summer, Sagittarius and Scorpius, are visible don't miss the chance to gaze into the heart of the Milky Way. M4, a globular cluster near red Antares in Scorpius is a nice sight in binoculars or a telescope. Then look high overhead with binoculars and find the coat hanger cluster between Vega and

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Chasing the Transit of Venus

by Cathy Buczynski, CCAS Education Chair, edited by Dave Hockenberry, CCAS Program Chair

Just about 8 years ago, a group of CCAS members (and others) got up very early, packed our gear and headed to Marsh Creek State Park to witness the Sun rising with Venus in the middle of its transit. We had to wait another 8 years in order to witness the transit again.

The time came again to pack our equipment and get out there but this time we would witness the first contact of Venus against the limb of the Sun. Hopefully. The day's weather was iffy at best but we would try. I personally got two phone calls from individuals who were interested in bringing their families out to join us. So we went. We met up at South Campus of West Chester University with a pretty good view of the horizon. First contact was shortly after 6:00 PM and this horizon would give us a few hours to watch Venus crawl across the Sun.

Dave Hockenberry and I were the first ones from the club to arrive. Harrison, a friend of Liz Smith, was waiting for us in his car. This could indicate that we were going to have a crowd!!! And we did. Many members and guests were there to witness this rare event.

I bet there were 25 people there. We were all looking forward to seeing the perfectly round black spot crawl across the Sun. But our luck was being tested.

The day's clouds were trying to let us see the Sun; and they tried and they tried. We would see glimpses of the Sun and we would aim our scopes at it and then it would disappear. There it was again; then it would disappear. Six o'clock came and went – still no good look at the Sun. Venus started its transit, but we could not see it. Harrison had an iPad and we watched a live webcast. I had Starry Nights planetarium software running and we watched the simulation. Dave

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Chasing the Transit (Cont'd)

(Continued from page 6)

passed out eclipse viewing sun shades that would work wonderfully for this event but would we get a chance to use them? Venus was now fully into the face of the Sun, but we could not see it. The cloud bank to the west was getting thicker and thicker and people were starting to leave.

Should we move to another location? Would we make it in time to see ANYTHING? Liz and TJ Smith decided to be our scouts and headed out to find a spot. Luckily, she had my cell phone number and luckily I decided to answer it. The report from the scouts was "It's sunny down here" so some of us decided to follow. Dave Hockenberry, Ann Miller and their friends, Mark and Mike, and I decided to follow our scouts and after a little cat-and-mouse, we ended up at Anson B. Nixon Park in Kennett Square.

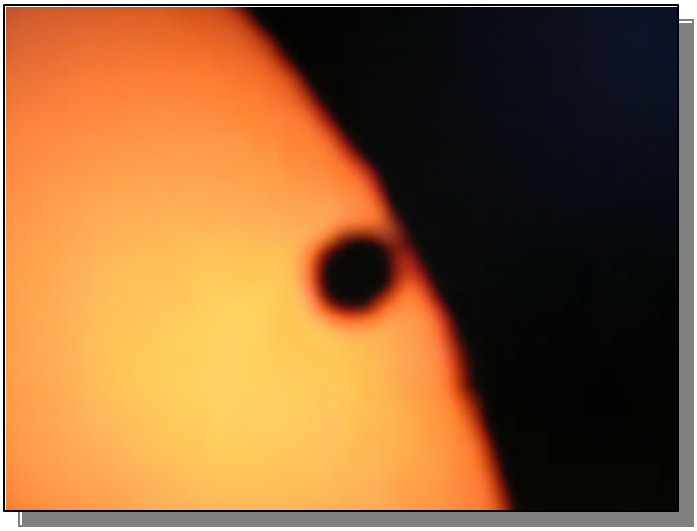
Hurry up! Get the equipment, find a spot with the longest view of the sunset and set up. I set up the club's 6" Dobson as a projection, Dave had a Lunt 60mm solar scope with an H-alpha filter. Liz and TJ set up their Meade ETX 80AT with a solar filter and we met Denis O'Keefe (a videographer friend of Liz's) with his Sony XD video camera with a Nikon lens. See Denis's video at http://www.youtube.com/watch?v=M7RqW8Jqe1Q.

As we were setting up, a visitor came by and all of us watched as the sun peeked out from the clouds just before it set. He recommended moving down the edge of the field, where there was a break in the trees, in order to watch the sunset a little longer.

Sure enough. We got enough of a break in the clouds to catch the Sun before it set. And there it was!!! Clouds made the Sun look like Jupiter, but we knew it

(Continued on page 8)

Chasing the Transit (cont'd)



Just before Third Contact and the Black Drop Effect

Just Before Fourth Contact

(Continued from page 7)

wasn't. There's a hole in the Sun – no it wasn't – it's Venus. But wait, we just saw some gigantic bug move quickly across the Sun! Could it be a new kind of sunspot? Nah, just some vacationers and business travelers in a jumbo jet.

We caught enough of Venus to lock it into our memories. We viewed it through the scopes, on the projection screen and directly through the eclipse viewers. The photos are taken of the projection from the 6" Dobson. If they look a bit oval, it's because of the angle at which I took the picture.

After the Sun set, a few of us had a bite to eat and when I got home, I set my computer to the Keck Observatory live webcast and took these pictures of the "black drop effect" and the last "bite" Venus took from the Sun as it became the morning star. Thank you Keck Observatory.

For those of you who missed it, not to worry. The next transit will be of Mercury on May 9, 2016. Let's get together to view it.

If Only We had Taller Been

by Ray Bradbury

[Editor's Note: Younger CCAS members may not be familiar with Bradbury's writing. He saw himself more as a dreamer rather than a science fiction writer. I think this poem exemplifies the beauty of his writing style. You can watch him recite a variation of it on the JPL news channel on YouTube. The link is: http://youtu.be/EBtZjbTDTDk]

The fence we walked between the years

Did balance us serene;

It was a place half in the sky where

In the green of leaf and promise of peach

We'd reach our hand to touch and almost touch that lie,

That blue that was not really blue.

If we could reach and touch, we said,

'Twould teach us, somehow, never to be dead.

We ached, we almost touched that stuff;

Our reach was never quite enough.

So, Thomas, we are doomed to die.

O, Tom, as I have often said,

How sad we're both so short in bed.

If only we had taller been,

And touched God's cuff, His hem,

We would not have to sleep

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Viewing the Partial Lunar Eclipse and Transit of Venus in Arizona
by Ed and Linda Lurcott

CCAS founder Ed Lurcott went to his son Steve's home in Scottsdale, Arizona, to watch the Transit of Venus and the Partial Lunar Eclipse. He was accompanied by his wife Evelyn & daughter, Linda. The Lurcotts utilized Steve's 6" Newtonian Telescope for both events. The lunar eclipse occurred on June 4th at 4am local time, while the transit occurred a day later, from 3pm until sunset, at approximately 7:30 pm. Clear skies through out! A good time was had by all!

Through the Eyepiece: Messier 7, Ptolemy's Cluster

by Don Knabb, CCAS Treasurer & Observing Chair

During the summer months I find myself irresistibly drawn to the southern sky. This part of the sky is visible to us for only a few months, and it is full of incredible objects to gaze upon. One of these objects is the open cluster Messier 7.

Messier 7 or M7, also designated NGC 6475 and sometimes known as Ptolemy's Cluster, is an open cluster of stars in the constellation of Scorpius. From a dark sky site the cluster is easily detectable with the naked eye, close to the "stinger" of Scorpius.

M7 has been known since antiquity. This great open star cluster is most often credited to Ptolemy, who listed in in his 'Almagest' as Object Number 567 in 130 AD. From his notes he describes it as "A nebulous cluster following the sting of Scorpius. Italian astronomer Giovanni Batista Hodierna observed it before 1654 and counted 30 stars in it. In 1764, French astronomer Charles Messier catalogued the cluster as the seventh member in his list of comet-like objects. English astronomer John Herschel described it as "coarsely scattered clusters of stars".

Telescopic observations of the cluster reveal about 80 stars within a field of view of 1.3° across. One of the easiest ways to find "Ptolemy's Cluster" is to recognize the two familiar constellation asterisms of Scorpius and Sagittarius. The bright star that represents the 'stinger' on the tail of the Scorpion is Lambda. Aim your binoculars three finger widths east (left). Under dark skies it will show as a conspicuous patch in the sky, but do not confuse it with its dimmer, northwestern neighbor, M6. In binoculars, Messier 7's stars will appear of varied brightness with no particular pattern and will occupy about 1/3 the field of view in average binoculars.

M7 is easily seen in the finder scope of a telescope. Or, use lowest magnification when observing with any telescope because of Messier 7's large apparent size. Because it is so bright,

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Image credit: Stellarium.org

Eyepiece (cont'd)

(Continued from page 10)

this open cluster is a great object on a moonlit night and larger telescopes can fully resolve its members.

This bright collection of about 80 mixed magnitude stars is estimated to be about 800-1000 light years away from Earth. Moving along through space in an area spanning about 18-25 light years across, this group of stars were all born about the same time some 220 million years ago – yet they have evolved differently.

The image below was taken by Josef Pöpsel and Dr. Stefan Binnewies of the Capella Observatory, with the telescope "Ganymed". It is used with their permission. The Capella Observatory is located on Mount Skinakas on the island of Crete. You can view the spectacular photos from the Capella Observatory at http://www.capella-observatory.com/ The telescope "Ganymed" has guest status at the Skinakas Observatory, which is the observatory of the Astronomical Institute of the University of Crete. "Ganymed" is a 60cm-Hypergraph (24"), a Cassegrain telescope, which has an effective focal length of 4800 mm (f/8).

Information credits:

Dickinson, Terence 2006. Nightwatch: a practical guide to viewing the universe. Buffalo, NY. Firefly Books

http://www.universetoday.com/31228/messier-7/

http://en.wikipedia.org/wiki/Messier_7

M7, Ptolemy's Cluster
Image courtesy of Pöpsel and Binnewies, Capella Observatory

Taller Been (cont'd)

(Continued from page 8)

away and go with them

Who've gone before,

A billion give or take a million boys or more

Who, short as we, stood tall as they could stand

And hoped by stretching thus to keep their land,

Their home, their hearth, their flesh and soul.

But they, like us, were standing in a hole.

O, Thomas, will a Race one day stand really tall

Across the Void, across the Universe and all?

And, measure out with rocket fire,

At last put Adam's finger forth

As on the Sistine Ceiling,

And God's great hand come down the other way

To measure Man and find him Good,

And Gift him with Forever's Day?

I work for that.

Short man. Large dream. I send my rockets forth between my ears,

Hoping an inch of Will is worth a pound of years.

Aching to hear a voice cry back along the universal Mall:

We've reached Alpha Centauri!

We're tall, O God, we're tall!

How Many Discoveries can You Make in a Month?

by Dr. Tony Phillips

This year NASA has announced the discovery of 11 planetary systems hosting 26 planets; a gigantic cluster of galaxies known as "El Gordo;" a star exploding 9 billion light years away; alien matter stealing into the solar system; massive bullets of plasma racing out of the galactic center; and hundreds of unknown objects emitting high-energy photons at the edge of the electromagnetic spectrum.

That was just January.

Within NASA's Science Mission Directorate, the Astrophysics Division produces such a list nearly every month. Indeed, at this very moment, data is pouring in from dozens of spacecraft and orbiting observatories.

"The Hubble, Spitzer, Chandra, and Fermi space telescopes continue to make groundbreaking discoveries on an almost daily basis," says NASA Administrator Charlie Bolden.

NASA astrophysicists and their colleagues conduct an ambitious research program stretching from the edge of the solar system to the edge of the observable Universe. Their work is guided in large part by the National Research Council's Decadal Survey of Astronomy and Astrophysics, which identified the following priorities:

- Finding new planets—and possibly new life—around other stars.
- Discovering the nature of dark energy and dark matter.
- Understanding how stars and galaxies have evolved since the Big Bang.
- Studying exotic physics in extreme places like black holes.

Observing time on Hubble and the other "Great Observatories" is allocated accordingly.

Smaller missions are important, too: The Kepler spacecraft, which is only "medium-sized" by NASA standards, has single-handedly identified more than 2300 planet candidates. Recent finds include planets with double suns, massive "super-Earths" and "hot Jupiters," and a miniature solar system. It seems to be only a matter of time before Kepler locates an Earth-sized world in the Goldilocks zone of its parent star, just right for life.

A future astrophysics mission, the James Webb Space Telescope, will be able to study the atmospheres of many of the

(Continued on page 13)

Artist's concepts such as this one are based on infrared spectrometer data from NASA's Spitzer Space Telescope. This rendering depicts a quadruple-star system called HD 98800. The system is approximately 10 million years old and is located 150 light-years away in the constellation Crater. Credit: NASA/JPL-Caltech/T. Pyle (SSC)

Space Place (Cont'd)

(Continued from page 12)

worlds Kepler is discovering now. The telescope's spectrometers can reveal the chemistry of distant exoplanets, offering clues to their climate, cloud cover, and possibilities for life.

That's not the telescope's prime mission, though. With a primary mirror almost 3 times as wide as Hubble's, and a special sensitivity to penetrating infrared radiation, Webb is designed to look into the most distant recesses of the universe to see how the first stars and galaxies formed after the Big Bang. It is, in short, a Genesis Machine.

Says Bolden, "We're on track in the construction of the James Webb Space Telescope, the most sophisticated science telescope ever constructed to help us reveal the mysteries of the cosmos in ways never before possible." Liftoff is currently scheduled for 2018.

How long will the list of discoveries be in January of that year? Stay tuned for Astrophysics.

For more on NASA's astrophysics missions, check out http://science.nasa.gov/astrophysics/.

Kids can get some of their mind-boggling astrophysics questions answered by resident Space Place astrophysicist "Dr. Marc" at http://spaceplace.nasa.gov/dr-marc-space.

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

Observing (Cont'd)

(Continued from page 5)

Altair. This is a great object to share with friends.

Comets: Although the brightness of comets is hard to predict, we have a chance at seeing a 7th magnitude comet in the later part of July passing through Leo and Leo Minor. Comet 96P/Machholz is heading toward the Sun and will move into the evening sky around July 21. A sky map is available in the July issue of Astronomy magazine.

Meteor showers: There is a lot to see for meteor fans during the last week of July. We can see a preview of the Perseid meteor shower as this shower extends

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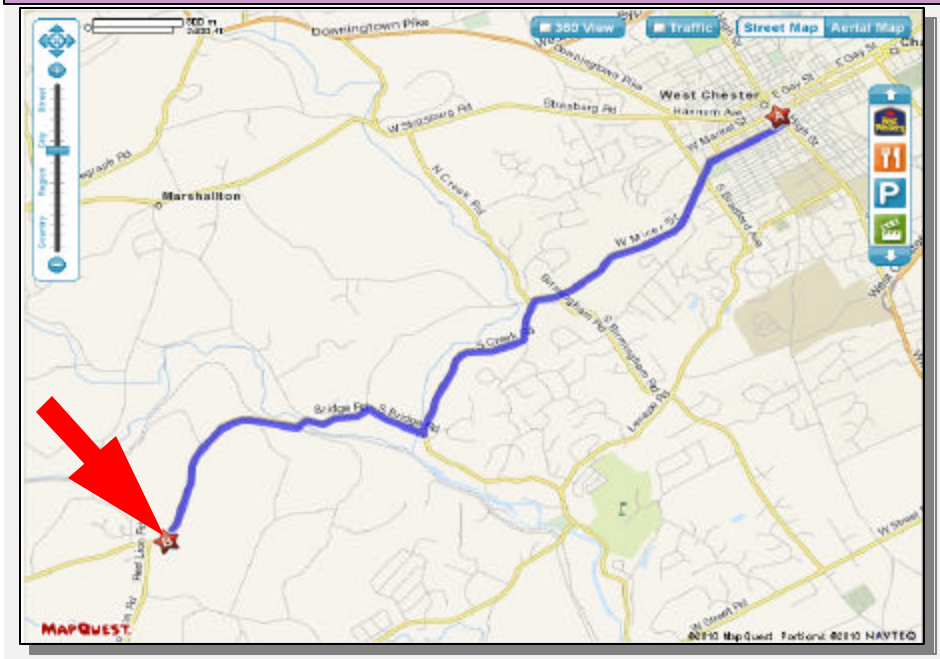
CCAS Directions



Brandywine Valley Association
1760 Unionville Wawaset Rd
West Chester, PA 19382
(610) 793-1090
http://brandywinewatershed.org/

BVA was founded in 1945 and is committed to promoting and protecting the natural resources of the Brandywine Valley through educational programs and demonstrations for all ages.

Brandywine Valley Association

The monthly observing sessions (held February through November) are held at the Myrick Conservation Center of the Brandywine Valley Association.

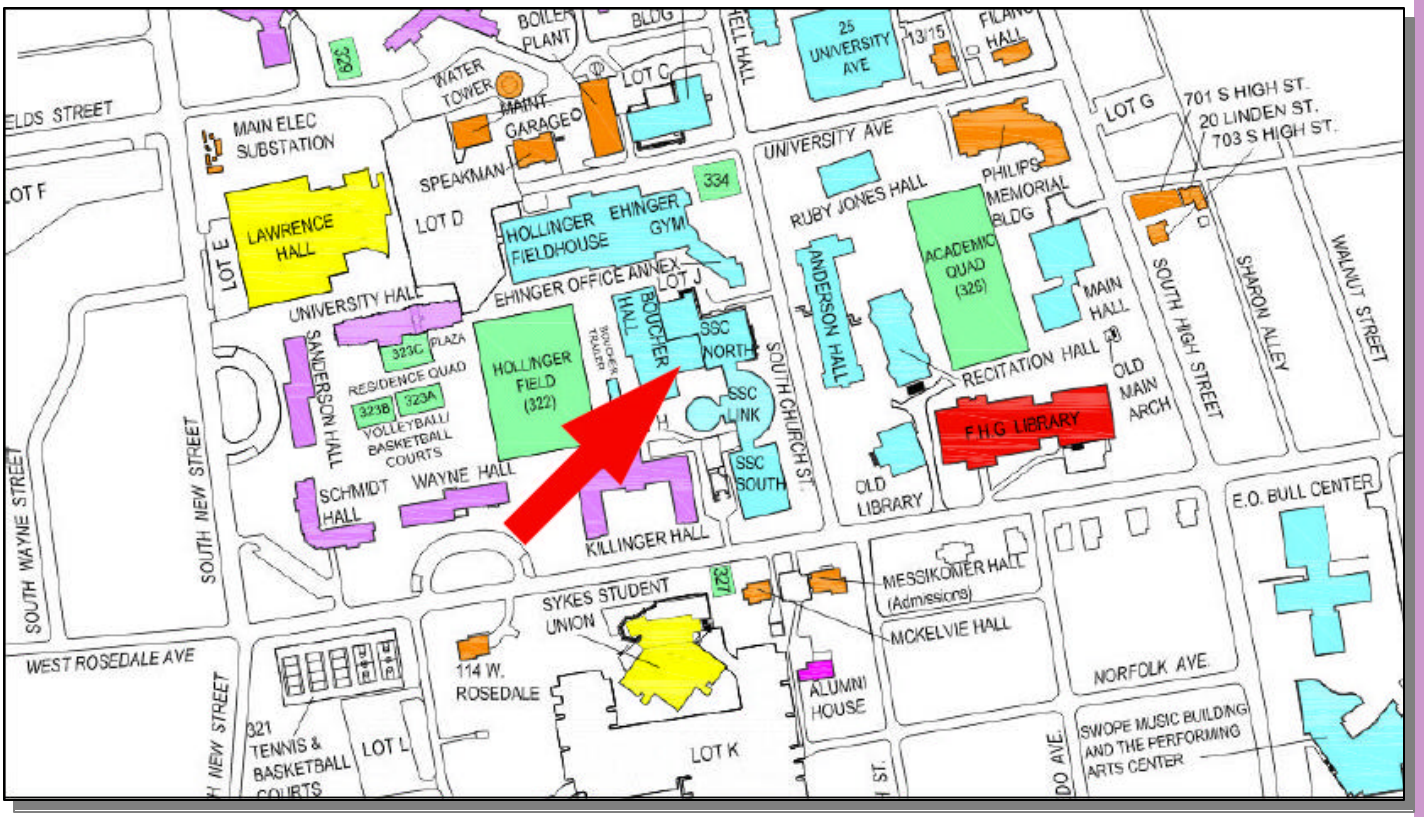
To get to the Myrick Conservation Center from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site at the BVA property, turn left off Route 842 into the parking lot by the office: look for the signs to the office along Route 842. From that parking lot, go left through the gate and drive up the farm lane about 800 feet to the top of the hill. The observing area is on the right.

If you arrive after dark, *please turn off your headlights and just use parking lights* as you come up the hill (so you don't ruin other observers' night vision).

CCAS Directions

West Chester University Campus

The monthly meetings (September through May) are held in Room 113 in Merion Science Center (formerly the Boucher Building), attached to the Schmucker Science Center. The Schmucker Science Center is located at the corner of S. Church St & W. Rosedale Ave. Parking is generally available across Rosedale in the Sykes Student Union parking lot (Lot K).



Meeting Minutes (Cont'd)

(Continued from page 13)

for several weeks before and after its peak in mid-August. And on the night of July 29-30 both the Alpha Capricornid and Southern Delta Aquarid showers peak. The best viewing will be after the Moon sets around 3 a.m.

September Speaker (Cont'd)

(Continued from page 3)

our meetings in October and November of this year. If you are interested in presenting at either of these meetings, or during one of the Spring 2013 monthly sessions, please contact me at programs@ccas.us.

CCAS Membership Information and Society Financials

Treasurer's Report

by Don Knabb

June 2012 Financial Summary

Beginning Balance	$1,490
Deposits	$44
Disbursements	$251
Ending Balance	$1,239

CCAS Summer Picnic

by Barb & Don Knabb

The CCAS summer picnic will be on Saturday, July 14th at 6:00 p.m. at our house. We ask everyone to bring food and/or drink and a lawn chair if you have one that is easy to carry. More details and driving directions will be sent by a "members" e-mail as the day approaches. And if the sky is clear please bring a telescope, of course!

Membership Renewals

You can renew your CCAS membership by writing a check payable to "Chester County Astronomical Society" and sending it to our Treasurer:

Don Knabb
988 Meadowview Lane
West Chester PA 19382

The current dues amounts are listed in the *CCAS Information Directory*. Consult the table of contents for the directory's page number in this month's edition of the newsletter.

CCAS Information Directory

Join the Fight for Dark Skies!

You can help fight light pollution, conserve energy, and save the night sky for everyone to use and enjoy. Join the nonprofit International Dark-Sky Association (IDA) today. Individual memberships start at $30.00 for one year. Send to:

International Dark-Sky Association
3225 North First Avenue
Tucson, AZ 85719

Phone: **520-293-3198**
Fax: **520-293-3192**
E-mail: **ida@darksky.org**

For more information, including links to helpful information sheets, visit the IDA web site at:

http://www.darksky.org

Note that our CCAS Webmaster John Hepler has a link to the IDA home page set up on our Society's home page at **http://www.ccas.us**.

Dark-Sky Website for PA

The Pennsylvania Outdoor Lighting Council has lots of good information on safe, efficient outdoor security lights at their web site:

http://www.POLCouncil.org

Find out about Lyme Disease!

Anyone who spends much time outdoors, whether you're stargazing, or gardening, or whatever, needs to know about Lyme Disease and how to prevent it. You can learn about it at:

http://www.LymePA.org

Take the time to learn about this health threat and how to protect yourself and your family. It is truly "time well spent"!

CCAS Event Information

We've set up a special phone number you can dial to find out if our monthly observing session and other scheduled events will be held or postponed. Call **610-436-0829** after 5 PM ET to hear a recording to find out the latest news.

Good Outdoor Lighting Websites

One of the biggest problems we face in trying to reduce light pollution from poorly designed light fixtures is easy access to good ones. When you convince someone, a neighbor or even yourself, to replace bad fixtures, where do you go for good lighting fixtures? Check out these sites and pass this information on to others. Help reclaim the stars! And save energy at the same time!

Starry Night Lights

Light pollution from poor quality outdoor lighting wastes billions of dollars and vast quantities of valuable natural resources annually. It also robs us of our heritage of star-filled skies. Starry Night Lights is committed to fighting light pollution. The company offers the widest selection of ordinance compliant, night sky friendly and neighbor friendly outdoor lighting for your home or business. Starry Night Lights is located in Park City, Utah.

Phone: **877-604-7377**
Fax: **877-313-2889**

http://www.starrynightlights.com

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Green Earth Lighting
Formerly
Outdoor Lighting Associates

Green Earth Lighting is a dedicated lifetime corporate member of the International Dark-Sky Association. GEL's products are designed to reduce or eliminate the negative effects outdoor lighting can have while still providing the light you need at night.

Green Earth Lighting LLC
620 Onion Creek Ranch Rd
Driftwood, Texas 78619

Phone: **512-944-7354**

http://www.greenearthlighting.com

Local Astronomy-Related Stores

Listing retail sites in this newsletter does not imply endorsement of any kind by our organization. This information is provided as a service to our members and the public only.

Skies UNLIMITED

Skies Unlimited is a retailer of telescopes, binoculars, eyepieces and telescope accessories from Meade, Celestron, Televue, Orion, Stellarvue, Takahashi, Vixen, Losmandy and more.

Skies Unlimited
Suburbia Shopping Center
52 Glocker Way
Pottstown, PA 19465

Phone: **610-327-3500** or **888-947-2673**
Fax: **610-327-3553**

http://www.skiesunlimited.net

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Spectrum Scientifics
Quality Science Products for All Ages

Located in Manayunk, Spectrum Scientifics educates and entertains customers with an array of telescopes, microscopes, binoculars, science toys, magnets, labware, scales, science instruments, chemistry sets, and much more.

4403 Main Street
Philadelphia, PA 19127

Phone: **215-667-8309**
Fax: **215-965-1524**

Hours:
Tuesday thru Saturday: 10AM to 6PM
Sunday and Monday: 11AM to 5PM

http://www.spectrum-scientifics.com

CCAS Information Directory

CCAS Lending Telescopes

Contact Don Knabb to make arrangements to borrow one of the Society's lending telescopes. CCAS members can borrow a lending telescope for a month at a time; longer if no one else wants to borrow it after you. Don's phone number is 610-436-5702.

CCAS Lending Library

Contact our Librarian, Barb Knabb, to make arrangements to borrow one of the books in the CCAS lending library. Copies of the catalog are available at CCAS meetings, and on the CCAS website. Barb's phone number is 610-436-5702.

Contributing to *Observations*

Contributions of articles relating to astronomy and space exploration are always welcome. If you have a computer, and an Internet connection, you can attach the file to an e-mail message and send it to: **newsletter@ccas.us**

Or mail the contribution, typed or handwritten, to:

John Hepler
2115 Lazor St.
Apt. 227
Indiana, PA 15701

CCAS Newsletters via E-mail

You can receive the monthly newsletter (in full color!) via e-mail. All you need is a PC or Mac with an Internet e-mail connection. To get more information about how this works, send an e-mail request to John Hepler, the newsletter editor, at: **newsletter@ccas.us**.

CCAS Website

John Hepler is the Society's Webmaster. You can check out our Website at:

http://www.ccas.us

John welcomes any additions to the site by Society members. The contributions can be of any astronomy subject or object, or can be related to space exploration. The only requirement is that it is your own work; no copyrighted material! Give your contributions to John Hepler at (724) 801-8789 or e-mail to webmaster@ccas.us

CCAS Purpose

The Chester County Astronomical Society was formed in September 1993, with the cooperation of West Chester University, as a non-profit organization dedicated to the education and enjoyment of astronomy for the general public. The Society holds meetings (with speakers) and observing sessions once a month. Anyone who is interested in astronomy or would like to learn about astronomy is welcome to attend meetings and become a member of the Society. The Society also provides telescopes and expertise for "nights out" for school, scout, and other civic groups.

CCAS Executive Committee

For further information on membership or society activities you may call:

President:	Roger Taylor 610-430-7768
Vice President:	Liz Smith 610-842-1719
ALCor, Observing, and Treasurer:	Don Knabb 610-436-5702
Secretary:	Ann Miller 610-558-4248
Librarian:	Barb Knabb 610-436-5702
Program:	Dave Hockenberry 610-558-4248
Education:	Kathy Buczynski 610-436-0821
Webmaster and Newsletter:	John Hepler 724-349-5981
Public Relations:	Deb Goldader 610-304-5303

CCAS Membership Information

The present membership rates are as follows:

REGULAR MEMBER……$25/year
SENIOR MEMBER…….$10/year
STUDENT MEMBER……..$ 5/year
JUNIOR MEMBER……..$ 5/year
FAMILY MEMBER…….$35/year

Membership Renewals

Check the Membership Renewals on the front of each issue of *Observations* to see if it is time to renew. If you need to renew, you can mail your check, made out to "Chester County Astronomical Society," to:

Don Knabb
988 Meadowview Lane
West Chester PA 19382-2178

Phone: **610-436-5702**
e-mail: **treasurer@ccas.us**

*Sky & Tele*scope Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **$32.95,** much less than the newsstand price of $66.00, and also cheaper than individual subscriptions ($42.95)! Buying a subscription this way also gets you a 10% discount on other Sky Publishing merchandise.

To **start** a **new** subscription, make **sure** you make out the check to the **Chester County Astronomical Society**, note that it's for *Sky & Telescope*, and mail it to Don Knabb.

To **renew** your "club subscription" contact Sky Publishing directly. Their phone number and address are in the magazine and on their renewal reminders. If you have **any** questions call Don first at 610-436-5702.

Astronomy Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **$34.00** which is much less than the individual subscription price of $42.95 (or $60.00 for two years). If you want to participate in this special Society discount offer, **contact our Treasurer Don Knabb.**