Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 18, No. 9 *Two-Time Winner of the Astronomical League's Mabel Sterns Award ¤ 2006 & 2009* *September 2010*

In This Issue

Membership Renewals Due

09/2010	Dascaloff & Family De Lucia Lurcott
10/2010	End Hardie, Jr.
11/2010	Athens Hepler Holenstein O'Hara

New Image of the Rosette Nebula Taken by WISE

provided by NASA/JPL

Important September 2010 Dates

1st • Last Quarter Moon 1:22 p.m.

8th • New Moon 6:30 a.m.

15th • First Quarter Moon 1:50 a.m.

22nd • Autumn begins at 11:09 p.m.

23rd • Full Moon 5:17 a.m.

30th • Last Quarter Moon 11:52 p.m.

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.

¤ **Saturday, September 18, 2010** - Night Out in Anson Nixon Park, Kennett Square.

¤ **Saturday, October 16, 2010** - Night Out in Hoopes Park, West Chester. The event is cohosted with the West Chester Department of Recreation.

¤ **Friday, November 5, 2010** - Night Out at Springton Manor, Glenmoore.

Summer/Fall 2010 Society Events

September 2010

1st • PA Outdoor Lighting Council monthly meeting, starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the PA Outdoor Lighting Council website (http://www.polcouncil.org/).

10th • West Chester University Planetarium Show, "Pluto Demoted", Schmucker Science Building, Show starts at 7 p.m. and run approximately one hour in length. For more information and reservations, please contact Dr. Karen Vanlandingham, Planetarium Director, via the planetarium's webpage (http://geology.wcupa.edu/planetarium).

10th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date September 11th). The observing session starts at sunset.

14th • DVD Lecture Series: "The Paradox of the Dark Night Sky", half-hour video presentation of a lecture by Professor Alex Filippenko, UC Berkeley. Room MER113, Merion Science Center (former Boucher Building), West Chester University. The video presentation immediately precedes the monthly meeting and starts at 7:00 p.m.

14th • CCAS Monthly Meeting, Room MER113, Merion Science Center (former Boucher Building), West Chester University. The meeting starts at 7:30 p.m. Guest Speaker: Dr. Dave Klassen, PhD, Rowan University: "Mars & the Martian Atmosphere." Constellation of the Month (COM): TBA.

17th • Reservations start for the October 10th planetarium show at the WCU Planetarium. For more information, please contact Dr. Karen Vanlandingham, Planetarium Director, via the planetarium's webpage (http://geology.wcupa.edu/planetarium).

20th • Open call for articles and photographs for the October 2010 edition of *Observations*.

26th • Deadline for newsletter submissions for the October 2010 edition of *Observations*.

October 2010

6th • PA Outdoor Lighting Council monthly meeting, starting at 7:30 p.m. Meetings are open to the public. For more information and directions, visit the PA Outdoor Lighting Council website (http://www.polcouncil.org/).

8th • West Chester University Planetarium Show, "The Expanding, Accelerating Universe," Schmucker Science Building, Show starts at 7 p.m. and run approximately one hour in length. For more information and reservations, please contact Dr. Karen Vanlandingham, Planetarium Director, via the planetarium's webpage (http://geology.wcupa.edu/planetarium).

8th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date October 9th). The observing session starts at sunset.

12th • DVD Lecture Series: "The Age of the Universe," half-hour video presentation of a lecture by Professor Alex Filippenko, UC Berkeley. Room MER113, Merion Science Center (former Boucher Building), West Chester University. The presentation immediately precedes the monthly meeting and starts at 7:00 p.m.

12th • CCAS Monthly Meeting, Room MER113, Merion Science Center (former Boucher Building), West Chester University. The meeting starts at 7:30 p.m. Guest Speaker: TBA. Constellation of the Month (COM): TBA.

20th • Open call for articles and photographs for the October 2010 edition of *Observations*.

22nd • Reservations start for the October 10th planetarium show at the WCU Planetarium. For more information, please contact Dr. Karen Vanlandingham, Planetarium Director, via the planetarium's webpage (http://geology.wcupa.edu/planetarium).

26th • Deadline for newsletter submissions for the October 2010 edition of *Observations*.

Mars' Mysterious Elongated Crater

submitted by ESA, Noordwijk, the Netherlands

Orcus Patera is an enigmatic elliptical depression near Mars' equator in the eastern hemisphere of the planet. Located between the volcanoes of Elysium Mons and Olympus Mons, its formation remains a mystery.

A new image from the High Resolution Stereo Camera (HRSC) aboard the European Space Agency's (ESA) Mars Express orbiter shows the unusual feature with unprecedented clarity.

Often overlooked, this well-defined depression extends approximately 240 miles by 90 miles (380 kilometers by 140 kilometers) in a NNE-SSW direction. It has a rim that rises up to 5,900 feet (1,800 meters) above the surrounding plains, while the floor of the depression lies 1,300 to 2,000 feet (400 to 600 meters) below the surroundings.

The term *patera* is used for deep, complex, or irregularly shaped volcanic craters such as

(Continued on page 9)

CCAS Original Astrophotography

by CCAS Program Chair Dave Hockenberry

M109 in Ursa Major, shot 4/19/2010. This barred spiral galaxy is the largest of about 50 galaxies that comprise the "M109 group." M109 is approximately 83.5 million light years distant, and has an apparent magnitude of 9.8. Some of the smaller galaxies can be seen in the photo surrounding the main galaxy. Shot with Starlight Xpress SXVF H9C through TeleVue NP 101is, stack of 14 5-minute images, guided with Meade LX200R and SX Lodestar camera. Stacked and median filtered with MaxIm DL5, color adjusted and occasional hot pixel removal with Photoshop CS3.

2010-2011 Speaker Series

by Dave Hockenberry, CCAS Program Chair

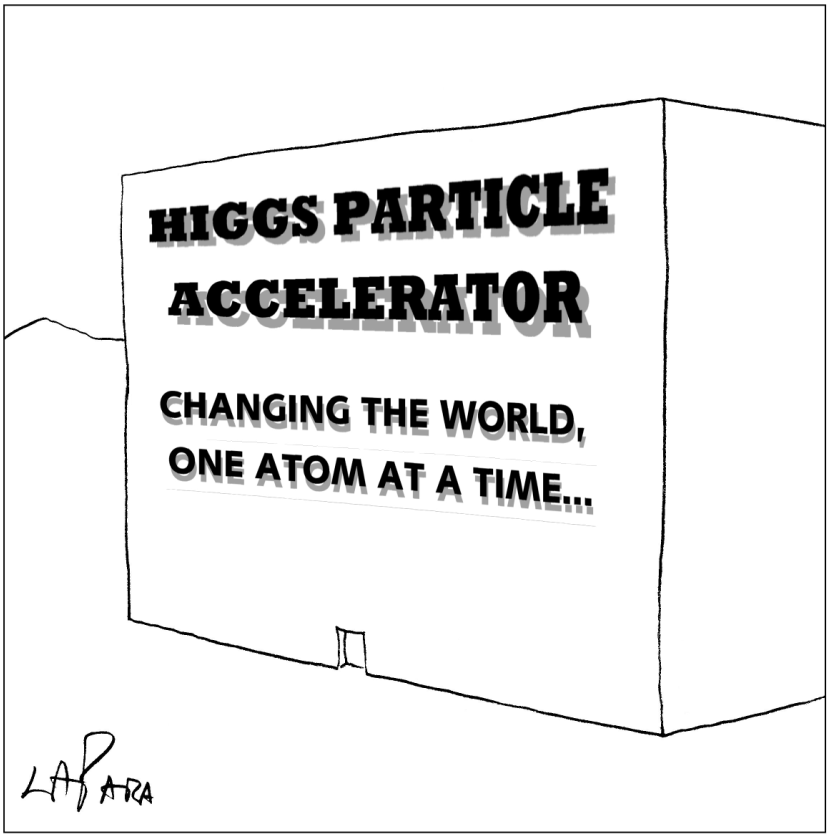
We are looking for speakers for our 2010-2011 season. We have Dr. Dave Klassen scheduled to speak at our meeting this month, and Dr. Beth Willman will join us at our November meeting. We need speakers for our meeting in October as well as for those in 2011.

If you have any suggestions for future speakers, or are interested in being a speaker yourself, please contact Dave Hockenberry at programs@ccas.us.

We are also looking for Constellation of the Month (COM) presenters for the 2010-2011 season. COM is a great way to learn the night sky and a useful tool if you are pursuing one of the Astronomical League's observing club awards. Participating is easy! Contact Kathy Buczynski at vp@ccas.us for a COM template to fill out.

Nicholas's Cartoon Corner

by Nicholas La Para



September 2010 Guest Speaker

by Dave Hockenberry

Our first speaker for the 2010-2011 season is Dr. David Klassen. He is a professor of Physics and Astronomy at Rowan University where he teaches introductory physics and a course on our solar system.

His presentation is based on his research and is entitled, "Discovering Water on Mars."

His research focuses on studying clouds on Mars in order to measure the amount of water stored in aerosol ices over time.

The goal of his research is to help improve our understanding of the overall Mars water budget.

Dr. David Klassen, Rowan University

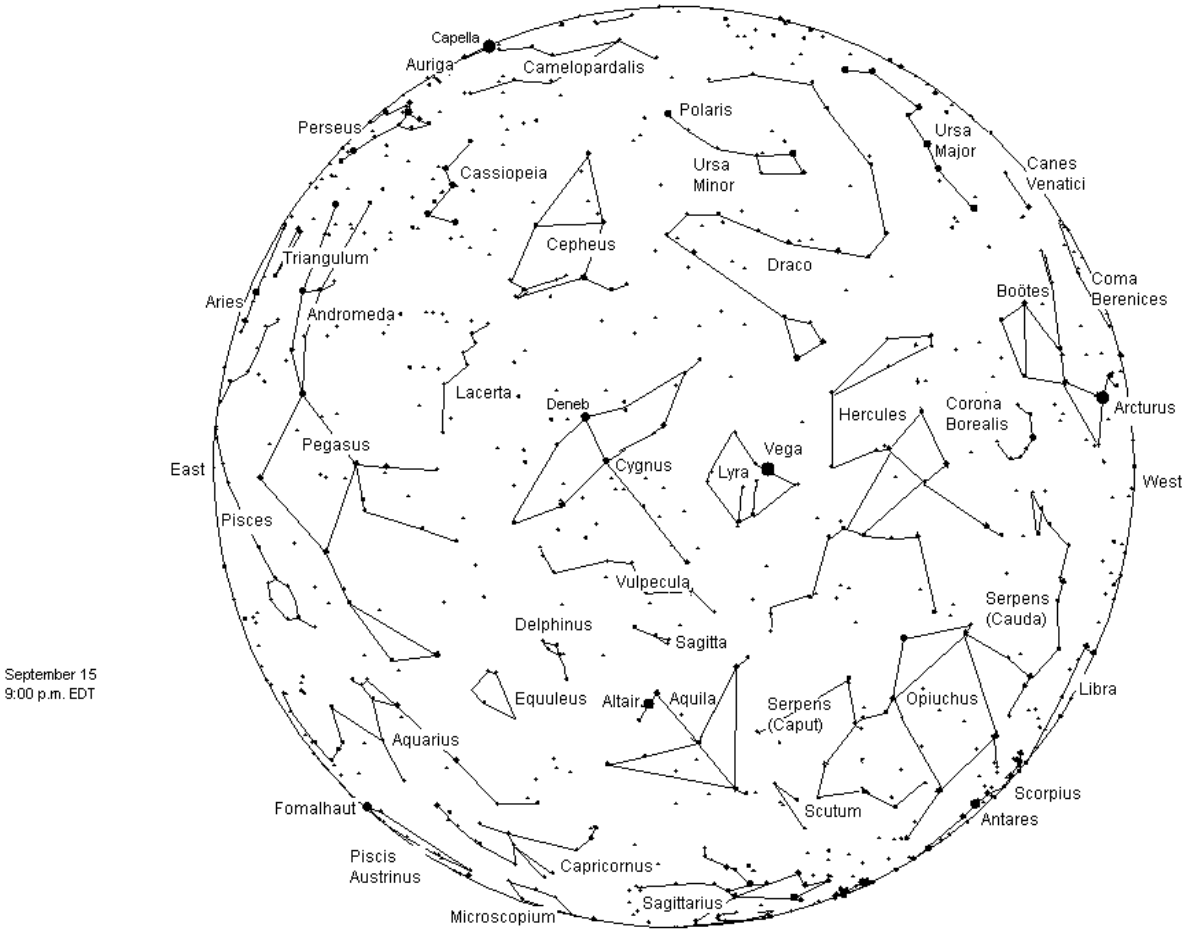
He has bachelor degrees in astrophysics and mathematics from the University of Minnesota. He earned his Ph.D. from the University of Wyoming where he honed his skills as a ground-based near-infrared observer.

He is currently working with images he took at the NASA Infrared Telescope Facility over several past oppositions as well as mapping data from the Mars Reconnaissance Orbiter CRISM instrument.

The Sky Over Chester County

September 15, 2010 at 9:00 p.m. EST

Note: the constellation stick figures used on the chart above were adapted from the book *The Stars: A New Way to See Them*, by H. A. Rey. This excellent guide to learning the constellations can be purchased at many area book stores, or from online booksellers.



This chart was produced using *Guide 8.0* skymapping software by Project Pluto, Bowdoinham, Maine

The faintest stars shown on this chart are fifth magnitude.

Date	Sunrise	Sunset	Moon Phases		
09/01/2010	6:28 a.m. EDT	7:32 p.m. EDT	First Quarter	09/15/2010	1:50 a.m. EDT
09/15/2010	6:42 a.m. EDT	7:09 p.m. EDT	Full Moon	09/23/2010	5:17 a.m. EDT
09/30/2010	6:56 a.m. EDT	6:45 p.m. EDT	Last Quarter	09/01/2010	1:22 p.m. EDT
			Last Quarter	09/30/2010	11:52 p.m. EDT
			New Moon	09/08/2010	6:30 a.m. EDT

September 2010 Observing Highlights
by Don Knabb, CCAS Secretary & Observing Chair

September 1	Last Quarter Moon, 1:22 p.m.
September 1	At dusk Venus, Spica and Mars form an almost straight line
September 6-21	The zodiacal light is visible 1-2 hours before sunrise
September 8	New Moon, 6:30 a.m.
September 13	Antares is near the crescent Moon at nightfall
September 15	First-quarter Moon, 1:50 a.m.
September 17-19	Jupiter and Uranus are less than one degree apart
September 20-21	Jupiter and Uranus are closest to Earth because they are at opposition
September 22	Autumn begins at 11:09 p.m.
September 23	Full Moon, 5:17 a.m.
September 30	Last Quarter Moon, 11:52 p.m.

The best sights this month: Jupiter is the highlight of night sky gazing during September! The king of the planets is as big and bright as it gets with opposition occurring close to perihelion, the near point of Jupiter's orbit. Because of this dual event Jupiter will be very bright, shining at magnitude -2.9. And Uranus will be within one degree of Jupiter, with Uranus' opposition happening less than 24 hours after Jupiter's opposition.

Mercury: Mercury gives its best pre-dawn show of 2010 during September. On September 19th it shines at magnitude -0.4.

Venus: Venus is very low in the glow of the sunset and reaches its peak brightness late in the month. Enjoy the "evening star" now, since it will soon slip into the dawn sky as it passes us in our race around the Sun.

Mars: The red planet is fading into the sunset and is hard to see without binoculars.

Jupiter: As mentioned above, Jupiter is the big event during September. It will be bigger and shine more brightly than at any time in 47 years!

Saturn: The ringed beauty is fading into the sunset and will be lost from view around mid-month. See you in the spring!

Uranus and Neptune: As mentioned above, Uranus is at opposition and will be as bright as this little green dot gets. Neptune is well above the horizon at dusk and is highest in the south in late evening. Sky and Telescope magazine has finder charts for these gas giants.

The Moon: With Autumn beginning on September 22nd and the full Moon on the 23rd, this is certainly the Harvest Moon, the full Moon nearest the equinox. This full Moon is called the Full Corn Moon by Native Americans. This full Moon gets that name because it marked when corn was supposed to be harvested.

Constellations: Hercules and the Summer Triangle constellations are near the zenith throughout September with "the backbone of the night", the Milky Way, arching across the sky. Stay up a bit later and the autumn constellations will rise in the east, so look for the Great Square of Pegasus, Cassiopeia and Perseus.

Messier/Deep Sky: We lose the southern Messier objects as September moves on but the Andromeda galaxy makes up for that loss. What a sight that is! The Double Cluster in Perseus is a worthwhile target and late at night the clusters in Auriga rise out of the eastern horizon.

Comets: Comet 103P/Hartley will be brightening to 10th magnitude by late September. This comet could just reach naked eye brightness in October and it will certainly be a nice telescopic and binocular tar-

(Continued on page 12)

Through the Eyepiece: Messier 17, the Swan Nebula

by Don Knabb, CCAS Secretary & Observing Chair

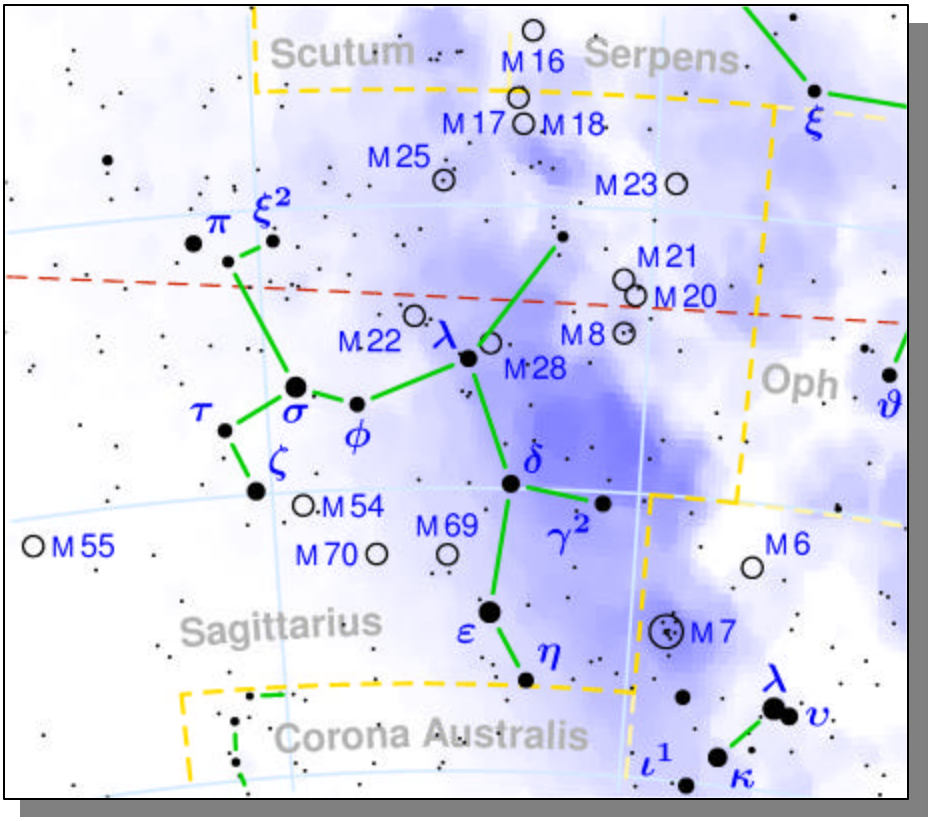
While gazing into the wonders of the southern summer sky I ventured up from the star that is the top of the "teapot" of Sagittarius and came upon a distinct nebula. My star charts revealed this fuzzy spot to be Messier 17, which is known by many names, my favorite being the Swan Nebula. It is often called the Omega Nebula or the Horseshoe Nebula and even the Lobster Nebula. In the New General Catalogue it is designated as NGC 6618.

To the right is a picture of the Swan Nebula that was taken by CCAS member Pete LaFrance from his observatory in Avondale, PA.

Using 600mm binoculars fitted with 15mm eyepieces I observed the nebula at 40X. What I saw was not like Pete's excellent photograph, but I had a clear view of the bright central section of the nebula. The nebula stands out well from the rich star field in which it resides.

The Swan Nebula is between 5,000 and 6,000 light-years from Earth and it spans some 15 light-years in diameter. The cloud of interstellar matter of which this nebula is a part is roughly 40 light-years in diameter. The total mass of the Swan Nebula is an estimated 800 solar masses! This makes the Swan Nebula larger than the more famous Orion Nebula, M42, that is a favorite object of our winter skies.

M17, The Swan Nebula. Photo by CCAS Member Pete LaFrance



Star map of the constellation Sagittarius, with M17 located near the boundary with the Scutum and Serpens constellations.

This object was discovered by Philippe Loys de Chéseaux in 1745. De Chéseaux's discovery was not widely known, thus Charles Messier independently rediscovered it and cataloged it on June 3, 1764.

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Through the Eyepiece (Cont'd)

(Continued from page 6)

If you are in a dark sky location, you can identify M17 in binoculars or a telescope by starting at the M24 "Star Cloud" north of Lambda Sagittari (the teapot lid star) and simply scan north. This nebula is bright enough to even cut through moderately light polluted skies, but don't expect to see it when the Moon is nearby. You'll enjoy the rich star fields combined with an interesting nebula in binoculars, while telescopes will easily begin resolution of interior stars.

Under very favorable conditions, M17 is just visible to the naked eye at its apparent visual brightness of 6.0 magnitudes. I was barely able to pick out M17 with my naked eyes, but the nearby Small Sagitarius Star Cloud, M24, which I wrote about last month, was more easily visible, as was the Lagoon and Trifid Nebulas.

We still have September to enjoy the many Messier objects in this section of the sky, so don't miss the opportunity to see M17 before it ducks (or swans) back under our horizon as summer turns to fall.

Information credits:

French, Sue. Celestial Sampler 2006. Cambridge, MA. Sky Publishing
http://en.wikipedia.org/wiki/Messier_17
http://www.seds.org/messier/m/m017.html
http://www.universetoday.com/31710/messier-17/

ESO Brings Starburst Galaxy into Focus

submitted by ESO, Garching, Germany

This visible-light image, made with the Wide Field Imager on the MPG/ESO 2.2-metre telescope at La Silla Observatory in Chile, shows the galaxy NGC 4666 in the center. ESO/J. Dietrich

The galaxy NGC 4666 takes pride of place at the center of this new image, made in visible light with the Wide Field Imager on the MPG/ESO 2.2-meter telescope at La Silla Observatory in Chile. NGC 4666 is a remarkable galaxy with very vigorous star formation and an unusual "superwind" of outflowing gas. It had previously been observed in X-rays by the ESA XMM-Newton space telescope, and this image was taken to allow further study of other objects detected in the earlier X-ray observations.

The prominent galaxy NGC 4666 in the center of the picture is a starburst galaxy, about 80 million light-years from Earth, in which particularly intense star formation is taking place. The starburst is thought to be caused by gravitational interactions between NGC 4666 and its neighboring galaxies, including NGC 4668, visible to the lower left. These interactions often spark vigorous star formation in the galaxies involved.

A combination of supernova explosions and strong winds from massive stars in the starburst region drives a vast flow of gas from the galaxy into space — a so-called "superwind." The superwind is huge in scale, coming from the bright central region of the galaxy and extending for tens of thousands of light-years. As the superwind gas is very hot, it emits radiation mostly as X-rays and in the radio part of the spectrum and cannot be seen in visible light images such as

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The Turbulent Tale of a Tiny Galaxy

by Trudy Bell & Dr. Tony Phillips

Next time you hike in the woods, pause at a babbling stream. Watch carefully how the water flows around rocks. After piling up in curved waves on the upstream side, like the bow wave in front of a motorboat, the water speeds around the rock, spilling into a riotous, turbulent wake downstream. Lightweight leaves or grass blades can get trapped in the wake, swirling round and round in little eddy currents that collect debris.

Astronomers have found something similar happening in the turbulent wake of a tiny galaxy that is plunging into a cluster of 1,500 galaxies in the constellation Virgo. In this case, however, instead of collecting grass and leaves, eddy currents in the little galaxy's tail seem to be gathering gaseous material to make new stars.

"It's a fascinating case of turbulence [rather than gravity] trapping the gas, allowing it to become dense enough to form stars," says Janice A. Hester of the California Institute of Technology in Pasadena.

The tell-tale galaxy, designated IC 3418, is only a hundredth the size of the Milky Way and hardly stands out in visible light images of the busy Virgo Cluster. Astronomers realized it was interesting, however, when they looked at it using NASA's Galaxy Evolution Explorer satellite. "Ultraviolet images from the Galaxy Evolution Explorer revealed a long tail filled with clusters of massive, young stars," explains Hester.

Galaxies with spectacular tails have been seen before. Usually they are behemoths—large spiral galaxies colliding with one another in the crowded environment of a busy cluster. Tidal forces during the collision pull gas and stars of all ages out of

(Continued on page 9)

In the ultraviolet image on the left, from the Galaxy Evolution Explorer, galaxy IC 3418 leaves a turbulent star forming region in its wake. In the visible light image on the right (from the Sloan Digital Sky Survey), the wake with its new stars is not apparent.

Space Place (cont'd)

(Continued from page 8)

these massive galaxies to form long tails. But in IC 3418, the tail has just young stars. No old stars.

"The lack of older stars was one tip-off that IC 3418's tail isn't tidal," says Hester. "Something else must be responsible for these stars."

Hester and eight coauthors published their findings in the June 10, 2010, issue of *The Astrophysical Journal Letters.* The team described the following scenario: IC 3418 is speeding toward the center of the Virgo cluster at 1,000 kilometers per second. The space between cluster galaxies is not empty; it is filled with a gaseous atmosphere of diffuse, hot hydrogen. Thus, like a bicyclist coasting downhill feels wind even on a calm day, IC 3418 experiences "a stiff wind" that sweeps interstellar gas right out of the little galaxy, said Hester—gas that trails far behind its galaxy in a choppy, twisting wake akin to the wake downstream of the rock in the babbling brook. Eddy currents swirling in the turbulent wake trap the gas, allowing it to become dense enough to form stars.

"Astronomers have long debated the importance of gravity vs. turbulence in star formation," Hester noted. "In IC 3418's tail, it's ALL turbulence."

To many astronomers, that's a surprising tale indeed.

See other surprising UV images from the Galaxy Evolution Explorer at http://www.galex.caltech.edu. Kids (and grownups) can play the challenging new Photon Pileup game at http://spaceplace.nasa.gov/en/kids/galex/photon/ .

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

NGC 4666 (cont'd)

(Continued from page 7)

the one presented here.

The image on page 7 was made as part of a follow-up to observations made with the ESA XMM-Newton space telescope in X-rays. NGC 4666 was the target of the original XMM-Newton observations, but, thanks to the telescope's wide field of view, many other X-ray sources were also seen in the background. One such serendipitous detection is a faint galaxy cluster seen close to the bottom edge of the image, right of center. This cluster is much farther away from us than NGC 4666, at a distance of about 3 billion light-years.

Mars Crater (Cont'd)

(Continued from page 2)

the Hadriaca Patera and Tyrrhena Patera at the northeastern margin of the Hellas impact basin. However, despite its name and the fact that it is positioned near volcanoes, the actual origin of Orcus Patera remains unclear.

Aside from volcanism, there are a number of other possible origins. Orcus Patera may be a large and originally round impact crater, subsequently deformed by compressional forces.

Alternatively, it could have formed after the erosion of aligned impact craters. However, the most likely explanation is that it was made in an oblique impact when a small body struck the surface at a shallow angle, perhaps less than 5° from the horizontal.

The existence of tectonic forces at Orcus Patera is evident from the presence of the numerous "graben," rift-valley-like structures that cut across its rim. Up to 1.5 miles (2.5 km) wide, these graben are oriented roughly east-west and are only visible on the rim and the nearby surroundings.

Within the Orcus Patera depression itself, the large graben are

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Goodbye Jack Horkheimer, "Star Hustler"

by Dave Hockenberry, CCAS Program Chair

Last week one of astronomy's most popular and beloved figures, "Jack" Foley A. Horkheimer, passed away in Miami, Florida. In addition to being Director Emeritus of the Miami Space Transit Planetarium, most of us knew Jack at the "Star Hustler," a five minute short program he wrote, directed, and starred in since 1976 for the Public Broadcasting Service. In this capacity, he became over the last 39 years the most popular advocate for naked eye astronomy in the United States, and through the Internet possibly the world. He is reported by the Miami Herald to have died due to complications of a respiratory illness. He was 72 years old.

Those of us who remember the days when PBS stations were not 24-7 broadcast operations will remember that the last program of the night before sign-off (usually just after rebroadcasts of Dr. Who or Blake's Seven) was always Star Hustler. The familiar Tomita synthesized version of Claude Debussy's Arabesque No. 1 always heralded the end of the PBS broadcasting day, and to those of us awake at that time of night a call to finish up whatever needed doing before bed. But we were ALWAYS treated to Jack's enthusiastic, cheerful discussion on what was available to naked-eye observers in the sky for the week.

The show started off as a creation for the local PBS affiliate in Miami, but within 2 years was being run throughout most PBS stations across the country. His nasal voice, quick smile, silly special effects, and some really bad toupees belied the inescapable quality of his presentations. He was an excellent astronomer, and had a real empathy for those who lived in urban areas and were not using expensive gadgets to view the night sky, i.e. the everyman. He made it fun and accessible, but also put in just enough advanced material and concepts to keep more knowledgeable amateurs interested. His sense of humor, always bubbling though the monolog, was always appreciated and was something we all did NOT get in our regular Astro periodicals such as Sky & Telescope or Astronomy Magazine.

To the annoyance of some, Horkheimer changed his moniker to Star Gazer. This was not for reasons of political correctness. When the age of computer Internet searches ushered in, search engines would often pull up ads and web sites for Hustler Magazine, and the name of the show was changed so that the younger crowd trying to access Horkheimer's web site wouldn't have to see this.

He is also credited with revolutionizing Planetarium presentations in the mid-70's with his "Child of the Universe" series, still admired as a classic by his peers everywhere. In addition to directing the Miami Planetarium, he was absurdly fond of being host one Summer to Time/Warner's Cartoon Network, introducing such shows as "Cow and Chicken," "The Power Puff Girls," and "I.M. Weasel." When asked about his age, he typically responded that he was "somewhere between post-puberty and senility."

On the more serious side, he helped found the International Planetarium Society, received a U.S. House of Representatives Congressional Record Outstanding Contributions Award, Outstanding Achievements Award from the Astronomical League, and was a recipient in 2000 of the Klumpke-Roberts Award from the Astronomical Society of the Pacific for popularizing astronomy. He also received the 12 Good Men Award from the Ronald McDonald House.

On his website in his biographical information it states that although he planned to keep observing into the next millennium, he already had a tombstone erected 2 years ago with the epitaph as follows:

"Keep Looking Up was my Life's Admonition; I can do little else in my present position."

Well, Jack, perhaps now you have the best view of the Heavens available. And, hopefully, generations of people who you inspired will also just "Keep Looking Up." We will miss you!

Mars Crater (Cont'd)

(Continued from page 9)

not visible, probably having been covered by later deposits.

But smaller graben are present, indicating that several tectonic events have occurred in this region and also suggesting that multiple episodes of deposition have taken place.

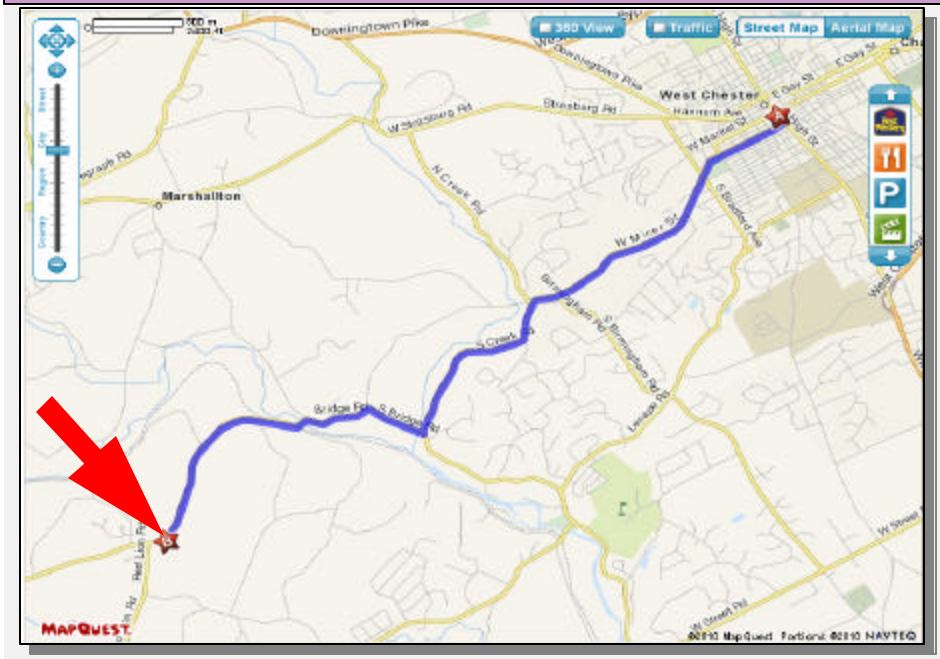
The occurrence of "wrinkle ridges" within the depression proves that not only extensional forces, but also compressive forces shaped this region. Wind-driven processes probably formed the dark shapes near the center of the depression where dark material excavated by small impact events in the depression has been redistributed.

Orcus Patera is an enigmatic elliptical depression near Mars's equator, in the eastern hemisphere of the planet. Located between the volcanoes of Elysium Mons and Olympus Mons, its formation remains a mystery. Photo courtesy of ESA .

The presence of graben and wrinkle-ridges has no bearing on the origin of Orcus Patera, as both can be found all over Mars.

The true origin of Orcus Patera remains an enigma.

CCAS Directions



Brandywine Valley Association

The monthly observing sessions (held year-round) 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).

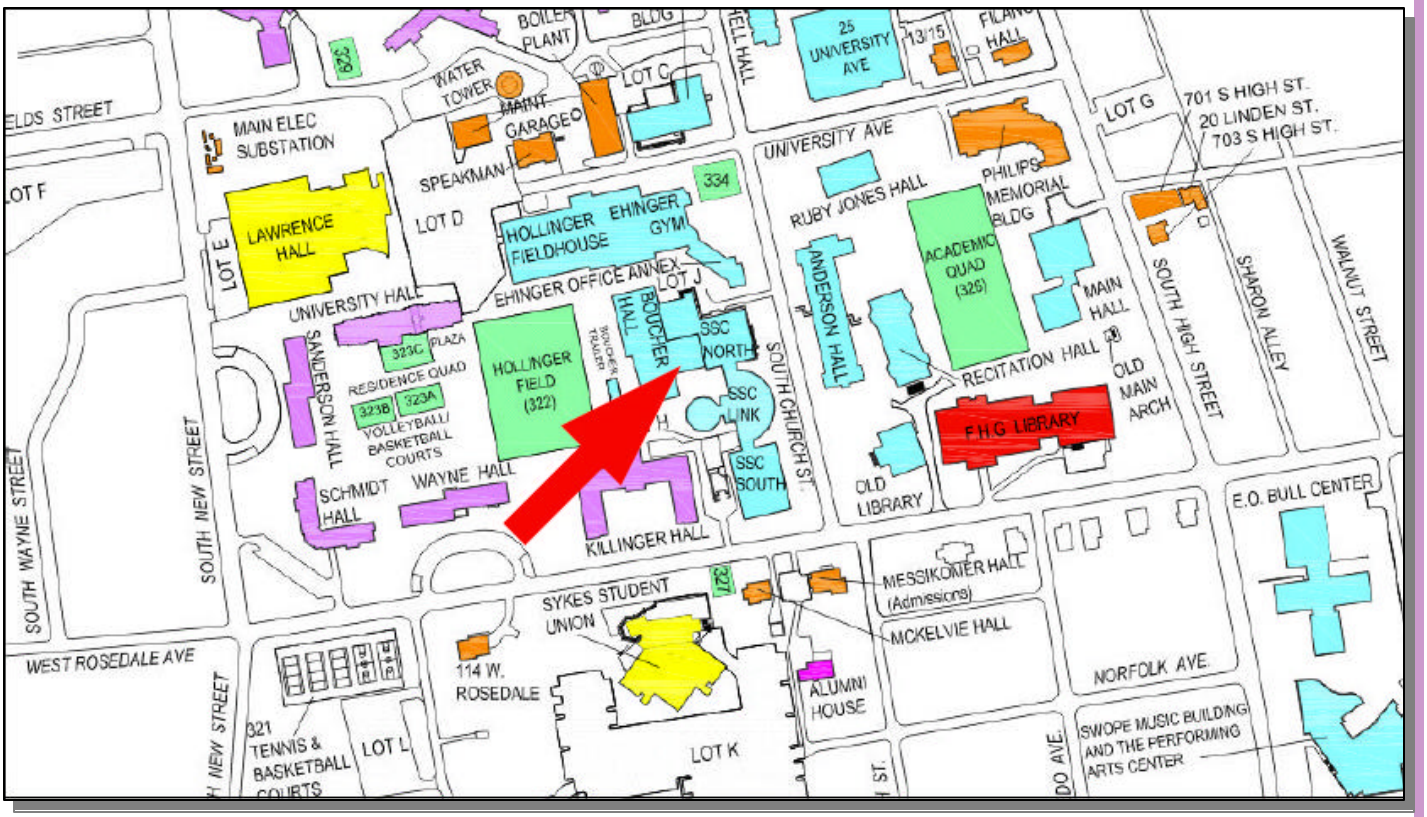
Brandywine Valley Association
1760 Unionville Wawaset Rd
West Chester, PA 19382
(610) 793-1090
http://brandywinewatershed.org/

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.

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).



Observing (Cont'd)

(Continued from page 5)

get. This comet lies within the constellation Cassiopeia, south of the "W", and is visible all night. Astronomy magazine has a finder chart for this dim fuzz ball.

Meteor Showers: There are no significant meteor showers during September.

Did You Know?

We often think of the Asteroid Belt as being crammed full of debris like a celestial traffic jam, but if all of the asteroids were combined, the object they would form would have a diameter a little less than half that of the moon, with 1/10th the moon's volume.

CCAS Membership Information and Society Financials

Treasurer's Report

by Bob Popovich

July 2010 Financial Summary

Beginning Balance	$1,379
Deposits	$135
Disbursements	$40
Ending Balance	$1,474

New Member Welcome!

Welcome new CCAS members Sharon Loving & her family from Oxford, PA.

We're glad you decided to join us under the stars! Clear Skies to you!

Membership Renewals

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

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

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 society. 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 Kathy Buczynski 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. Kathy's phone number is 610-436-0821.

CCAS Lending Library

Contact our Librarian, Linda Lurcott Fragale, 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. Linda's phone number is 610-269-1737.

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 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 (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 "star nights" 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 Pres:	Kathy Buczynski 610-436-0821
ALCor and Treasurer:	Bob Popovich 484-467-5562
Secretary and Observing:	Don Knabb 610-436-5702
Librarian:	Barb Knabb 610-436-5702
Program:	Dave Hockenberry 610-558-4248
Education:	Kathy Buczynski 610-436-0821
Webmaster and Newsletter:	John Hepler 724-801-8789
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 Treasurer's Report in 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:

Bob Popovich
416 Fairfax Drive
Exton, PA 19341-1814

Phone: 484-467-5562
e-mail: B2N2@verizon.net

*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 Bob Popovich.

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 Bob first at **610-363-8242.**

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 Bob Popovich.**