Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

Vol. 18, No. 6 *Two-Time Winner of the Astronomical League's Mabel Sterns Award ¤ 2006 & 2009* *June 2010*

In This Issue

Photo From The Anson Nixon Night Out on May 22nd, 2010

Membership Renewals Due

06/2010	Hebding
	Siskind
07/2010	Baci
	Duffy
	Goldader & Family
	Hockenberry & Family
	Joniec
	Rybski
08/2010	Fragale
	Given
	Knabb & Family
	Labroli
	Morgan
	Naik
	Smith

Important June 2010 Dates

4th • Last Quarter Moon 6:13 p.m.

12th • New Moon 7:15 a.m.

19th • First Quarter Moon 12:29 a.m.

21st • Summer begins at the solstice at 7:28 a.m.

26th • Full Moon 7:30 a.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.

Spring/Summer 2010 Society Events

June 2010

2nd • PA Outdoor Lighting Council monthly meeting, Bucktown Branch of National Penn Bank, 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 • DVD Lecture Series: "Birth Cries of Black Holes", half-hour video presentation of a lecture by Professor Alex Filippenko, UC Berkeley. Room 113, Merion Science Center, West Chester University. The presentation immediately precedes the monthly meeting and starts at 7:00 p.m.

8th • CCAS Monthly Meeting, Room 113, Merion Science Center, West Chester University. The meeting starts at 7:30 p.m. Presentation: CCAS Members are encouraged to prepare a 15-20 minute presentation on their observations, research, or any topic related to astronomy. Contact Dave Hockenberry to sign up.

11th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date June 12th). The observing session starts at sunset.

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

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

July 2010

7th • PA Outdoor Lighting Council monthly meeting, Bucktown Branch of National Penn Bank, 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/).

9th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather July 10th). The observing session starts at sunset.

17th CCAS Summer Picnic for members and their families. Details and directions will be sent in a future members e-mail.

20th • Open call for articles and photographs for the August 2010 edition of Observations newsletter.

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

Minutes from the May 2010 Monthly CCAS Meeting

by Don Knabb, CCAS Secretary & Observing Chair

- Approximately 20 members were in attendance.
- DVD presentation: *Enigmatic Gamma-Ray Bursts* was shown.
- Program – Unfortunately, our presenter cancelled at the last minute due to illness. In place of the planned program, the group held an open discussion on various topics.
- No committee reports were presented at the meeting other than a discussion of upcoming observing events.
- The Constellation of the Month was Sextans, presented by Dave Hockenberry.

CCAS Member Astrophotography

by Dave Hockenberry, CCAS Program Chair

M101 in Ursa Major. This is the "other" Pinwheel Galaxy as professional astronomers name by convention. This is a large face-on galaxy about 23 million light-years distance, and is almost twice the size of our Milky Way at 170,000 light-years disk diameter. The faint "bent" arm seen on the top of this image is thought to be a distortion from a near-collision with another galaxy sometime in the distant past. Shot 4/18/2010 with Starlight Xpress SXVF H9C camera through TeleVue NP 101is, no filters, stack of 14 5-minute images combined with SD Mask in MaxIm DL5. Stretched, color adjusted and hot pixel removal in Photoshop CS3. Autoguided with MaxIm DL5 using Lodestar camera on Meade LX200R mount.

2010-2011 Speaker Series

by Dave Hockenberry, CCAS Program Chair

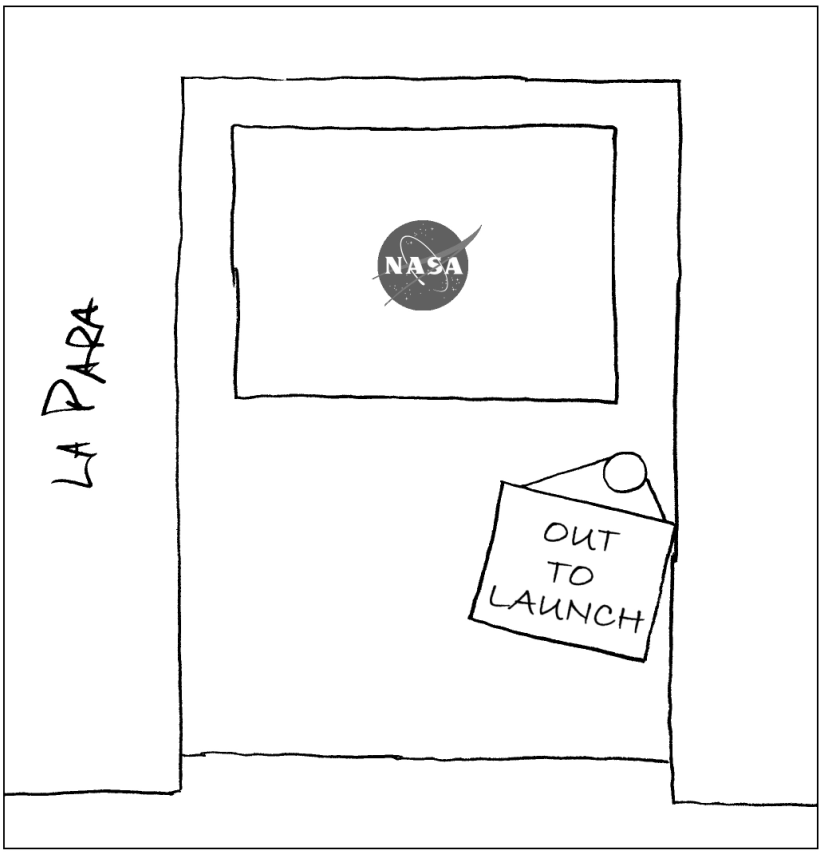
We are looking for main presentation speakers for our 2010-2011 season. Currently Dr. Dave Klassen is scheduled to speak at our September 2010 meeting, and Dr. Beth Willman will join us at our November meeting.

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



Phoenix Mars Lander is Silent as New Image Shows Damage

provided by NASA/JPL

The solar-powered lander completed its 3-month mission and kept working until sunlight waned 2 months later.

NASA's Phoenix Mars Lander has ended operations after repeated attempts to contact the spacecraft were unsuccessful. A new image transmitted by NASA's Mars Reconnaissance Orbiter (MRO) shows signs of severe ice damage to the lander's solar panels.

"The Phoenix spacecraft succeeded in its investigations and exceeded its planned lifetime," said Fuk Li, manager of the Mars Exploration Program at NASA's Jet Propulsion Laboratory in Pasadena, California. "Although its work is finished, analysis of information from Phoenix's science activities will continue for some time to come."

Last week, NASA's Mars Odyssey orbiter flew over the Phoenix landing site 61 times during a final attempt to communicate with the lander. No transmission from the lander was detected. Phoenix also did not communicate during 150 flights in three earlier listening campaigns this year.

Earth-based research continues on discoveries Phoenix made during summer conditions at the far-northern site where it landed May 25, 2008. The solar-powered lander completed its 3-month mission and kept working until sunlight waned 2 months later.

Phoenix was not designed to

(Continued on page 8)

The Sky Over Chester County

June 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		
06/01/2010	5:34 a.m. EDT	8:23 p.m. EDT	First Quarter	06/19/2010	12:29 a.m. EDT
06/15/2010	5:31 a.m. EDT	8:31 p.m. EDT	Full Moon	06/26/2010	7:30 a.m. EDT
06/30/2010	5:35 a.m. EDT	8:33 p.m. EDT	Last Quarter	06/04/2010	6:13 p.m. EDT
			New Moon	06/12/2010	7:15 a.m. EDT

June 2010 Observing Highlights

by Don Knabb, CCAS Secretary & Observing Chair

June 3	Mars is close to Regulus in Leo the Lion
June 4	Last-quarter Moon, 6:13 p.m.
June 11	Venus, Castor and Pollux form a straight, nearly horizontal line in the evening sky
June 12	New Moon, 7:15 a.m.
June 14	Venus is close to the crescent Moon
June 18	Saturn is above the Moon
June 19	First-quarter Moon, 12:29 a.m.
June 19-20	Venus is less than 1 degree from the center of the Beehive Cluster
June 21	Summer begins at the solstice at 7:28 a.m.
June 26	Full Moon, 7:30 a.m.

The Best Sights This Month: Venus, Mars and Saturn fill the late evenings of June. It doesn't get much better for naked eye observing than this! Venus is the highlight of the month as it forms a straight line with Castor and Pollux, then has a close encounter with M44, the Beehive Cluster in Cancer the Crab. And during June we have a chance to see a naked-eye comet, Comet C/2009 R1 (McNaught). This is a rare opportunity, so it is worth seeking out this visitor from the outer solar system.

Mercury: Mercury is an elusive target in the hour before the Sun rises. You'll need to get around 5:00 a.m. if you want to see the planet closest to the Sun during June.

Venus: On June 11th, our sister planet forms a straight, nearly horizontal line with Castor and Pollux, the brightest stars of Gemini. Then on June 19th and 20th Venus is near the center of Cancer the Crab and less than one degree from M44, the Beehive. Grab your binoculars for this close encounter!

Mars: Look for Mars at the bottom of the Sickle of Leo on June 5th and 6th, when the red planet is very close to the blue-white star Regulus.

Jupiter: Jupiter is still an early morning object during June. If you get up before dawn you will see the king of the planets shining brightly in the east.

Saturn: In a telescope Saturn looks like a planet with a line through it. That is because the rings are tilted only about 2 degrees from being edge-on to us. June is a great month to see Saturn, so set up your telescope and aim to the southwest. If you need help finding Saturn, download a free map of the sky from skymaps.com.

Uranus and Neptune: Both of these gas giants are visible in the early morning skies. Wait a few months for better viewing opportunities as they get higher into the sky.

The Moon: I love the full Moon of June. It is very low in the sky so it shines brightly onto the sides of trees, lighting them up like a spotlight. The June full Moon was called the Full Strawberry Moon by Native American tribes. This name was universal to every Algonquin tribe. However, in Europe they called it the Rose Moon.

Constellations: Sunset is so late during June that we need to stay up late to see the stars, but the warm nights and the fireflies make it worth the effort. Leo the Lion is running into the west as if he is fleeing from Hercules in the east. And if you stay up a bit later look to the south for bright red Antares in the constellation Scorpius the Scorpion.

Messier/Deep Sky: There are many wonderful deep sky objects to see during June. My favorites this time of year are the globular clusters. Look for M3 and M5 high overhead, then find M4 near Antares in Scorpius. Then seek M10 and M12 in Ophiuchus. Of course I cannot forget to mention the brightest globular cluster in northern skies, M13 in Hercules.

Comets: Early in June we have a chance to see a naked-eye comet! Comet C/2009 R1 (McNaught) is

(Continued on page 13)

Through the Eyepiece: The Whale and the Hockey Stick Galaxies

by Don Knabb, CCAS Secretary & Observing Chair

A few weeks ago Dave Hockenberry sent me a picture he took of galaxies in the constellation Canes Venatici. I was so intrigued by the shapes of these galaxies that I wanted to investigate them and write this month's article about them.

And besides my interest, with the Philadelphia Flyers chasing the Stanley Cup it seems appropriate to include a galaxy called the Hockey Stick in this month's Observations!

The larger of the two objects in Dave's photo is NGC 4631, the Whale Galaxy. This is a huge edge-on spiral galaxy which is distorted by its small elliptical companion, NGC 4627, just to its right in the picture above. This pair is included in a collection called Arp's Catalog of Peculiar Galaxies as Arp 281. Perhaps these peculiar galaxies draw peculiar people to write about them and take peculiar pictures of them?

Some references call NGC 4631 the Herring Galaxy, but comparing something as huge as a galaxy to a herring seems less appropriate than the whale comparison.

The Whale Galaxy contains a central starburst, a region of intense star formation. The largest stars in this region only burn hydrogen gas for a short period then explode as supernovae. So many supernovae have exploded in the center of the Whale Galaxy that a super wind of gas is blowing out of the plane of the galaxy. One might wonder if this is the Whale expelling matter from its blow-hole.

In the upper left of Dave's photo is the Hockey Stick Galaxies, which are NGC 4656 and NGC 4657. NGC 4656 is the handle of the hockey stick and NGC 4657 is the blade. This pair of galaxies is being distorted by the Whale Galaxy. Gravitational interaction between the Whale Galaxy and the Hockey Stick Galaxies is what tore the Hockey Stick Galaxies apart and gave it such an unusual appearance.

So if you enjoy seeking out the faint and fuzzy deep space objects be sure to include this interesting collection of galaxies in your quest.

Information credits:
http://seds.org/messier/xtra/ngc/n4631.html
http://en.wikipedia.org/wiki/NGC_4631
http://en.wikipedia.org/wiki/NGC_4656_and_NGC_4657
http://www.daviddarling.info/encyclopedia/H/Hockey_Stick.html
http://www.astrographics.com/GalleryPrintsIndex/GP3772.html

Photo credit: Dave Hockenberry, astrophotographer, 15 exposures of 7 minutes each

Ancient Supernova Riddle, Solved

by Dr. Tony Phillips

Australopithecus squinted at the blue African sky. He had never seen a star in broad daylight before, but he could see one today. Was it dangerous? He stared for a long time, puzzled, but nothing happened, and after a while he strode across the savanna unconcerned.

Millions of years later, we know better.

That star was a supernova, one of many that exploded in our corner of the Milky Way around the Pliocene era of pre-humans. *Australopithecus* left no records; we know the explosions happened because their debris is still around. The solar system and everything else within about 300 light-years is surrounded by supernova exhaust—a haze of million-degree gas that permeates all of local space.

Supernovas are dangerous things, and when one appears in the daytime sky, it *is* cause for alarm. How did Earth survive? Modern astronomers believe the blasts were too far away (albeit not by much) to zap our planet with lethal amounts of radiation. Also, the Sun's magnetic field has done a good job holding the hot gas at bay. In other words, we lucked out.

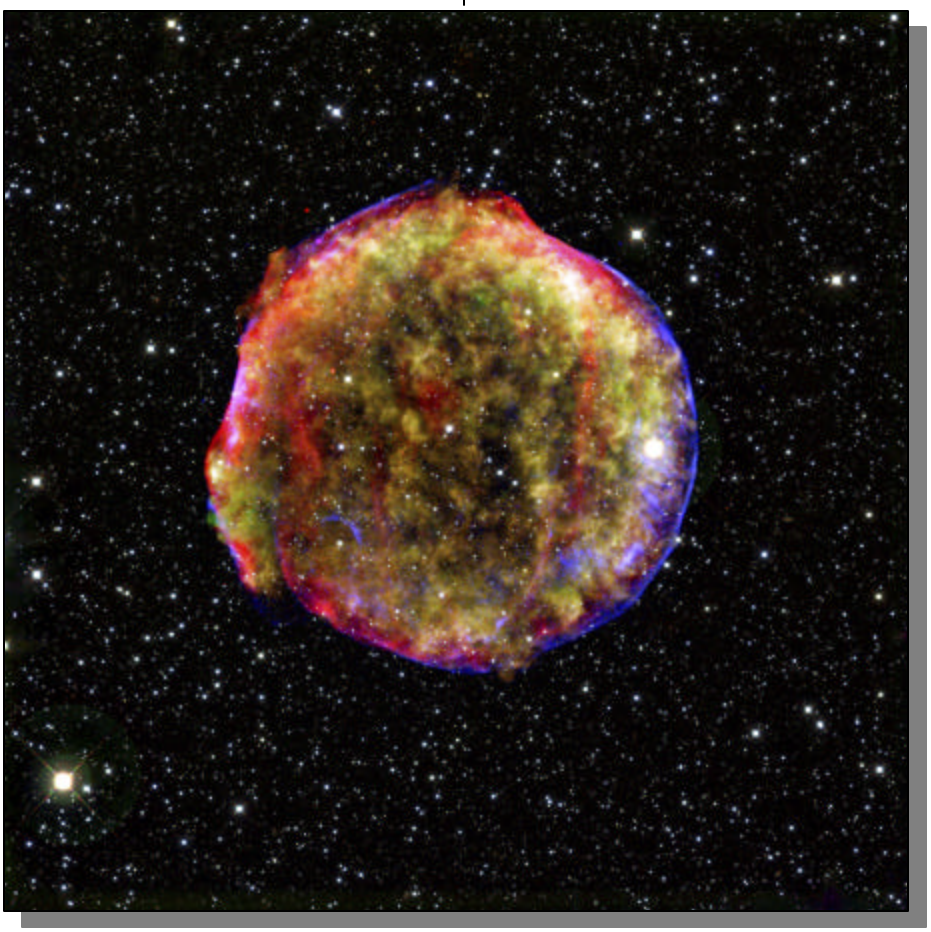
The debris from those old explosions has the compelling power of a train wreck; astronomers have trouble tearing their eyes away. Over the years, they've thoroughly surveyed the wreckage and therein found a mystery—clouds of hydrogen and helium apparently too fragile to have survived the blasts. One of them, whimsically called "the Local Fluff," is on the doorstep of the solar system.

"The observed temperature and density of the Fluff do not provide enough pressure to resist the crushing action of the hot supernova gas around it," says astronomer Merav Opher of George Mason University. "It makes us wonder, how can such a cloud exist?"

NASA's Voyager spacecraft may have found the answer.

NASA's two Voyager probes have been racing out of the solar system for more than 30 years. They are now beyond the orbit of Pluto and on the verge of entering interstellar space. "The Voyagers are not actually inside

(Continued on page 10)



Left-over cloud from the Tycho supernova, witnessed by Tycho Brahe and other astronomers over 400 years ago. This image combines infrared light captured by the Spitzer Space Telescope with x-rays captured by the Chandra X-ray Observatory, plus visible light from the Calar Also Observatory in Spain.

Phoenix (Cont'd)

(Continued from page 3)

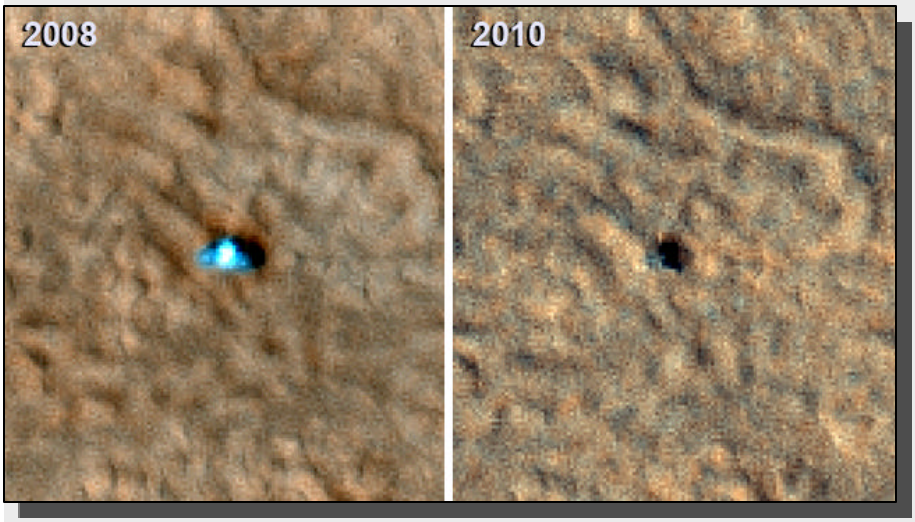
survive the dark, cold, icy winter. However, scientists couldn't eliminate the slim possibility that Phoenix survived without listening for the lander after abundant sunshine returned.

The MRO image of Phoenix taken this month by the High Resolution Imaging Science Experiment, or HiRISE, camera on board the spacecraft suggests the lander no longer casts shadows the way it did during its working lifetime.

"Before and after images are dramatically different," said Michael Mellon of the University of Colorado in Boulder, a science team member for both Phoenix and HiRISE. "The lander looks smaller, and only a portion of the difference can be explained by accumulation of dust on the lander, which makes its surfaces less distinguishable from surrounding ground."

Apparent changes in the shadows cast by the lander are consistent with predictions of how Phoenix could be damaged by harsh winter conditions. Scientists anticipated that the weight of a carbon-dioxide ice buildup could bend or break the lander's solar panels. Mellon calculated hundreds of pounds of ice probably coated the lander in midwinter.

During its mission, Phoenix confirmed and examined patches of the widespread deposits of underground water ice detected by



Two images of the Phoenix Mars lander taken from Martian orbit in 2008 and 2010. The 2008 lander image shows two relatively blue spots on either side corresponding to the spacecraft's clean circular solar panels. In the 2010 image scientists see a dark shadow that could be the lander body and eastern solar panel, but no shadow from the western solar panel. *NASA/JPL-Caltech/University of Arizona*

Odyssey and identified a mineral called calcium carbonate that suggested occasional presence of thawed water. The lander also found soil chemistry with significant implications for life and observed falling snow. The mission's biggest surprise was the discovery of perchlorate, an oxidizing chemical on Earth that is food for some microbes and potentially toxic for others.

"We found that the soil above the ice can act like a sponge, with perchlorate scavenging water from the atmosphere and holding on to it," said Peter Smith, Phoenix principal investigator at the University of Arizona in Tucson. "You can have a thin film layer of water capable of being a habitable environment. A micro-world at the scale of grains of soil — that's where the action is."

The perchlorate results are shaping subsequent astrobiology research as scientists investigate the implications of its antifreeze properties and potential use as an energy source by microbes. Discovery of the ice in the uppermost soil by Odyssey pointed the way for Phoenix. More recently, the MRO detected numerous ice deposits in middle latitudes at greater depth using radar and exposed on the surface by fresh impact craters.

"Ice-rich environments are an even bigger part of the planet than we thought," Smith said. "Somewhere in that vast region there are going to be places that are more habitable than others."

Starstuff: Copernicus and the Shuttle

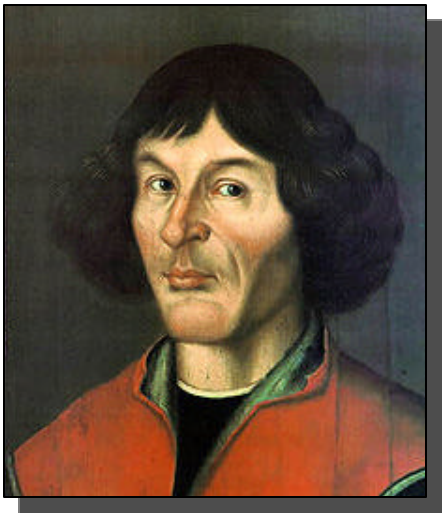
by Roger Taylor, CCAS President

Five hundred years is but a single tick in the clock of cosmic time, but within that tick all of science, as we know it, came to be. Even in the course of human history, a half-millennium is but a blink of the eye.

Two events occurred in the last few weeks that made me think again about how young modern science truly is. The first was the final launch and touchdown of the Shuttle Atlantis. Its final supply mission to the international space station marks the beginning of the end of this chapter in the exploration of space.

The second event was the *second* funeral of arguably the first hero of modern science. Nicklaus Copernicus was laid to final rest with honor and enshrined in the Cathedral in Poland under which his remains were discovered, where he had lain in an unmarked and unknown grave.

Many of you know that his heliocentric model fell under an interdict by the Roman Catholic Church for nearly five hundred years. His work had been deemed heretical was banned because humanity, the "Crown of Creation" was not at the center of the universe. Reading Copernicus' work among other things is what got Galileo into trouble. It's interesting that this year the "rehabilitation" of Copernicus and his work was granted by the Church. This came on the heels of Galileo's



Nicolas Copernicus
1473—1543

own rehabilitation eighteen years ago.

Finding Copernicus' remains and verifying their identity would make a wonderful TV miniseries. There have been more than half a dozen attempts at locating his remains over the years starting in 1802. Finally in 2005 archeologists doing an ultrasonic scan of the floor of the cathedral where he was canon found what they thought was a grave. Indeed it was, but could they conclusively prove that the remains found within were those of Copernicus?

For the next three years, efforts were made to provide confirmation. The methods used were fascinating. Forensic analysts were able to reconstruct the face from the remains of the skull. They determined that their results closely matched the portraits that they had of him from the time, even down to his broken nose. Next they were able to extract DNA from bone marrow and teeth and match it to the DNA of a few hairs found in the pages of manuscripts know to have been his. The proofs were

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Copernicus and His Heliocentric Model of the Solar System

Starstuff (Cont'd)

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presented and the puzzle was solved.

A black granite tombstone emblazoned with the sun and six orbiting planets mark his final resting place in the Cathedral of Frombork in Poland.

It is arguable that his work heralded the scientific revolution. Some even call it the Copernican revolution. It's as if moving us from the center of the universe gave us a clearer psychic vantage point to better understand the universe. The science that ensued and grew and spread ultimately led to the Shuttle era of space travel and oddly enough to the science that allowed Copernicus' bones to be discovered after five centuries.

Supernova Riddle (cont'd)

(Continued from page 7)

the Local Fluff," explains Opher. "But they are getting close and can sense what the cloud is like as they approach it."

And the answer is …

"Magnetism," says Opher. "Voyager data show that the Fluff is strongly magnetized with a field strength between 4 and 5 microgauss. This magnetic field can provide the pressure required to resist destruction."

If fluffy clouds of hydrogen can survive a supernova blast, maybe it's not so surprising that we did, too. "Indeed, this is helping us understand how supernovas interact with their environment—and how destructive the blasts actually are," says Opher.

Maybe *Australopithecus* was on to something after all.

Opher's original research describing Voyager's discovery of the magnetic field in the Local Fluff may be found in *Nature*, **462**, 1036-1038 (24 December 2009). The Space Place has a new Amazing Fact page about the Voyagers' Golden Records, with sample images and sounds of Earth. Just in case one of the Voyager's ever meets up with ET, we will want to introduce ourselves. Visit http://spaceplace.nasa.gov/en/kids/voyager.

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

Hubble Celebrates 20th Anniversary

submitted by NASA & The Space Telescope Science Institute

NASA's best-recognized, longest-lived, and most prolific space observatory zoomed past a threshold of 20 years of operation this past April. On April 24, 1990, the space shuttle and crew of STS-31 were launched to deploy the Hubble Space Telescope into a low Earth orbit.

What followed was one of the most remarkable sagas of the space age. Hubble's unprecedented capabilities made it one of the most powerful science instruments ever conceived by humans, and certainly the one most embraced by the public.

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Hubble's View of a Small Portion of the Carina Nebula / NASA & Space Telescope Science Institute

Hubble Anniversary (Cont'd)

(Continued from page 10)

Hubble discoveries revolutionized nearly all areas of current astronomical research, from planetary science to cosmology. And, its pictures were unmistakably out of this world. This brand new Hubble photo (see previous page) is of a small portion of one of the largest seen star-birth regions in the galaxy, the Carina Nebula. Towers of cool hydrogen laced with dust rise from the wall of the nebula.

The scene is reminiscent of Hubble's classic "Pillars of Creation" photo from 1995, but is even more striking in appearance. The image captures the top of a three-light-year-tall pillar of gas and dust that is being eaten away by the brilliant light from nearby bright stars. The pillar is also being pushed apart from within, as infant stars buried inside it fire off jets of gas that can be seen streaming from towering peaks like arrows sailing through the air.

NASA and the Space Telescope Science Institute (STScI) are celebrating Hubble's journey of exploration with this stunning new picture, online educational activities, an opportunity for people to explore galaxies as armchair scientists, and an opportunity for astronomy enthusiasts to send in their own personal greetings to Hubble for posterity.

For more images and the full story, visit http://hubblesite.org/newscenter/archive/releases/2010/13/.

Photos From the Girl Scout Night Out at Hibernia Park

by Liz Smith

Movie Review: Moon

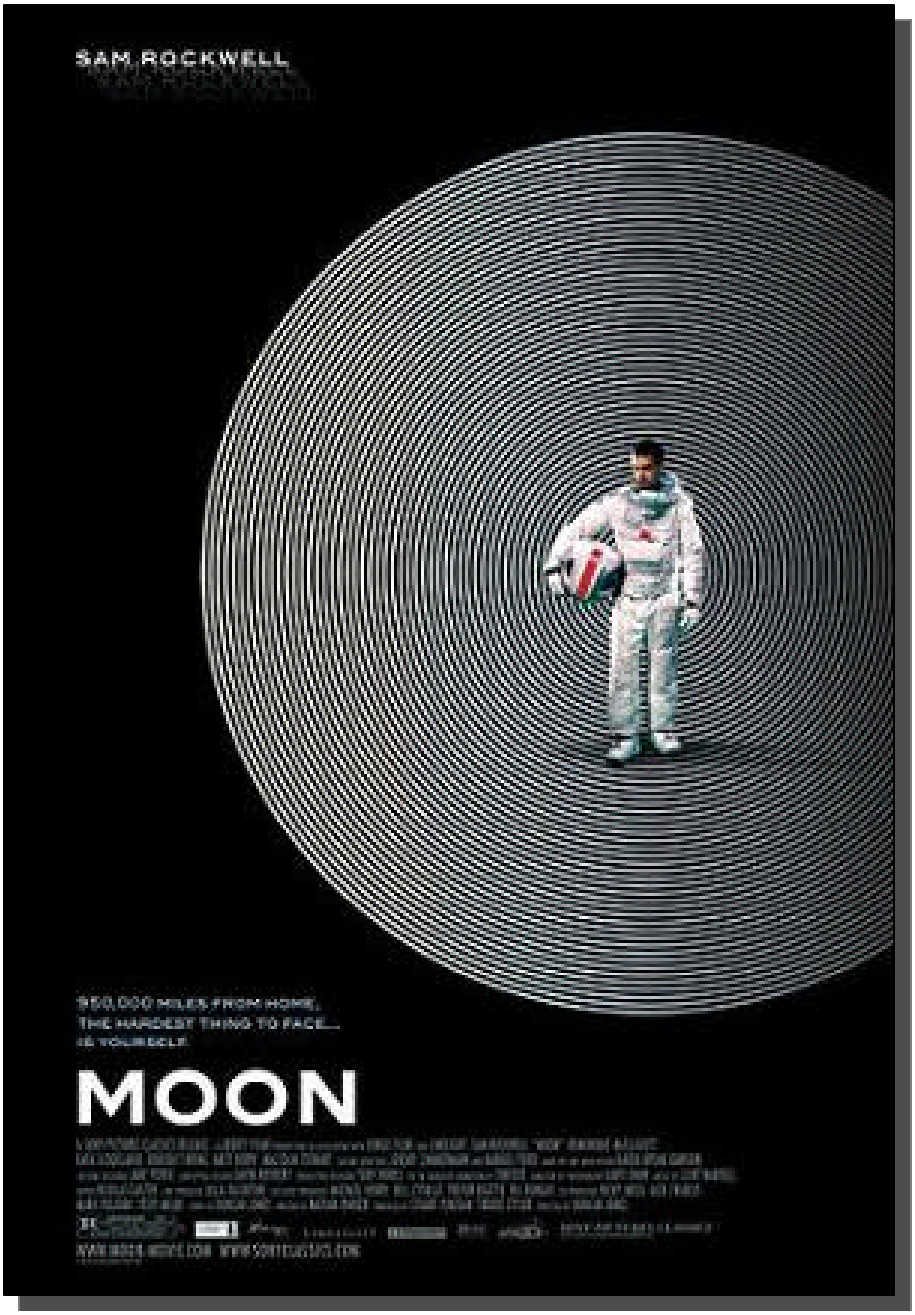
by Don Knabb, CCAS Secretary & Observing Chair

Sometime last summer I heard a podcast review of the movie *Moon*. Barb and I would have enjoyed seeing this movie on the big screen, but it was only shown in limited release, so we had to wait for the movie to be released on DVD, which occurred a month or so ago.

I'll say right from the start that we really enjoyed this movie. It's not flashy or action packed but is a movie that is enjoyable and satisfying to watch. I put it in a class of movies I like to call "serious science fiction movies". For me this class includes movies such as *2010*, *Solaris*, *Alien* and *Outland*. All these are movies of the near future and they depict a future that is quite plausible. In *Moon* we get a glimpse of what it could be like to work on the Moon. *2010* shows what it might be like to travel to Jupiter, *Solaris* shows life on a space station orbiting an alien world, *Alien* concerns a ship in the depths of space and *Outland*, starring Sean Connery, shows life on a mining colony on Jupiter's moon Io.

It's not that I don't like movies that are more fantastic such as Star Trek or Star Wars (well, the early Star Wars movies anyway). I enjoy them as well, but the "serious science fiction" movies have a more real feel to them that I appreciate and they respect the physical laws of nature instead of ignoring them.

The story concerns an employee of Lunar Industries who is the sole inhabitant of a lunar mining base. He is near the end of his three year contract when things start to fall apart. The movie is the debut of director Duncan Jones, who is David Bowie's son. It stars Sam Rockwell as the employee and Kevin Spacey is the voice of his robot companion.



Poster credit: Theatrical poster for Moon, Copyright © 2008 by All City. All Rights Reserved.

The movie is essentially a drama, not an action movie. I enjoyed the acting and the pace of the movie is measured so that it is not slow but is not rushed. As is often said, the plot thick-

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Movie Review (Cont'd)

(Continued from page 12)

ens as the movie progresses. I found myself identifying with the main character as he tried to figure out what was happening to him. The movie spends a fair amount of time presenting itself as a puzzle, giving you clues and bits of information as you try to put together the pieces of what is happening to the main character.

The special effects are appropriate for a "serious science fiction movie". That is, they are not flashy and are not the main feature of the movie. They are a realistic depiction of what a lunar mining facility might look like.

So, enough said. I don't want to tell you any more about the plot because a great deal of the pleasure of this movie is the Joy of Discovery as the story unfolds. If you like a movie of the near future that makes you think and respects science then I give Moon my highest recommendation. Let me know what you think of it if you see it.

Mark Your Calendars!

Save the date! The CCAS Summer Picnic will be held on the evening of Saturday July 17, 2010.

This is a picnic for members and their families only. Details and directions will be sent in a future "CCAS members" e-mail.

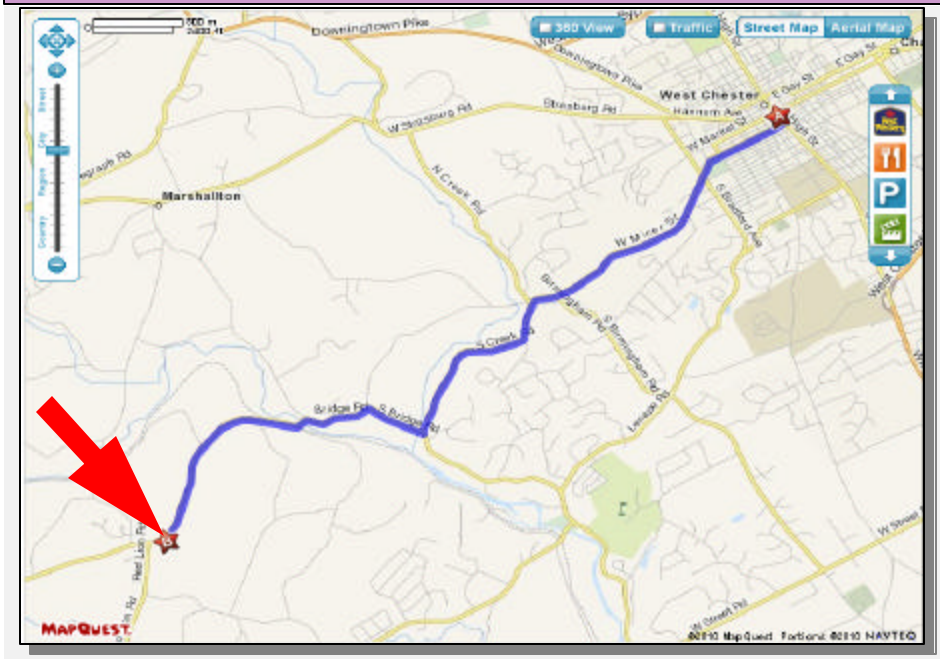
Observing (Cont'd)

(Continued from page 5)

predicted to peak at 5th magnitude so it should be visible when there is no Moon in the sky. There is a finder chart in the June issue of Astronomy magazine. With binoculars or a telescope we should be able to see a tail angling upward into the northern sky.

Meteor showers: On June 23/24 you might catch a few meteors from the Bootid shower. The meteors will appear to radiate from the constellation Boötes the Herdsman which is high in the sky during June. The best time to see these bits of comet dust is between when it gets dark and midnight.

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 year-round) are held at the Myrick Conservation Center of the Brandywine Valley Association.

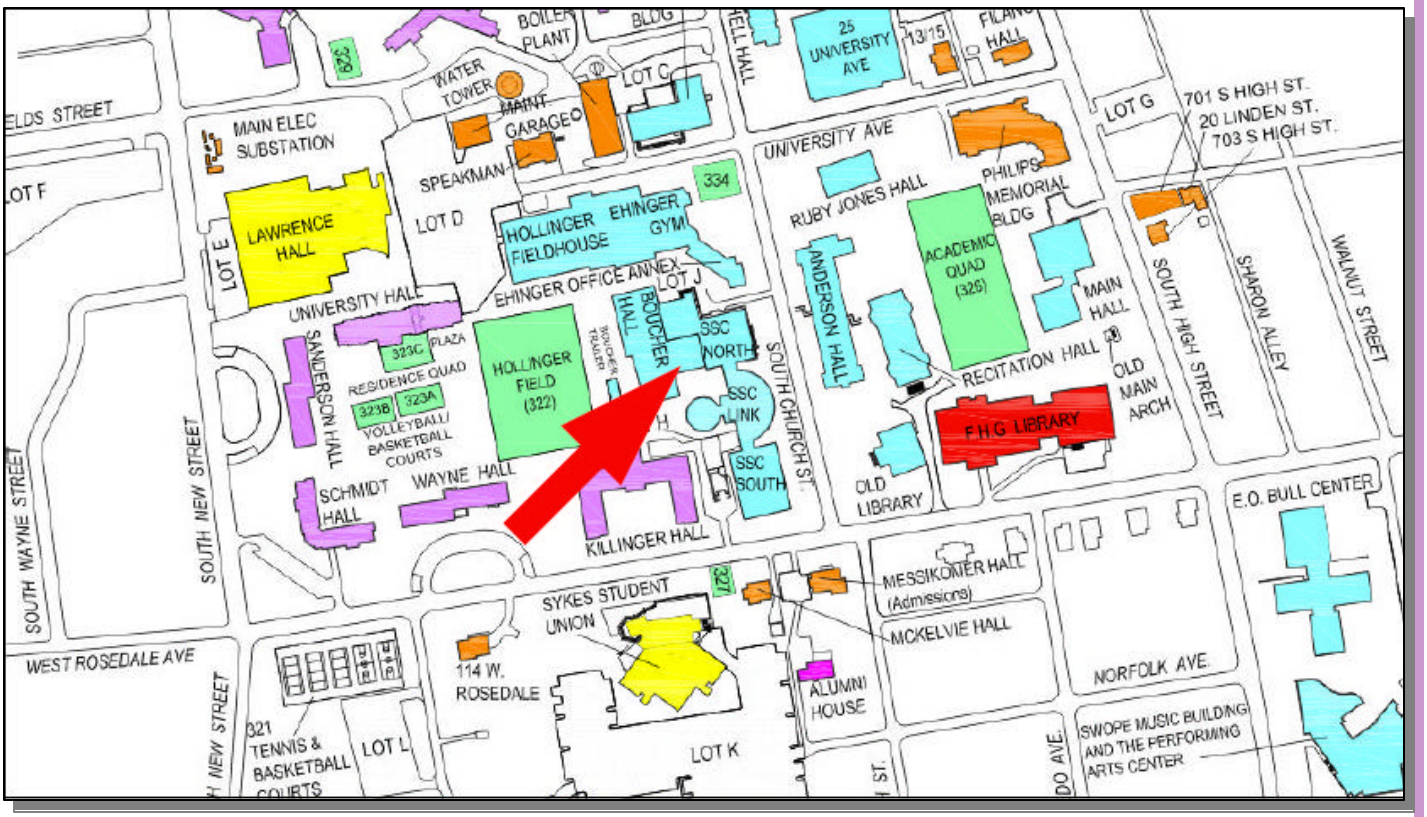
To get to the Myrick Conservation Center from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles. To get to the observing site at the BVA property, turn left off Route 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).

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).



November 2010 Guest Speaker

by Dave Hockenberry

As bad luck would have it, for the second month in a row our guest speaker was unable to attend the monthly meeting. Dr. Willman suffered from laryngitis and had to cancel her presentation.

Dr. Willman has rescheduled her presentation with us and will be our guest speaker for our November 2010 monthly meeting.

We look forward to learning more about her research on distant galaxies.

CCAS Membership Information and Society Financials

Treasurer's Report

by Bob Popovich

April 2010 Financial Summary

Beginning Balance	$1,523
Deposits	$25
Disbursements	$0
Ending Balance	$1,548

New Member Welcome!

This month we welcome new CCAS member Aylam Ragnam from West Chester, PA.

We're glad you decided to join us again 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
500 W. Rosedale Ave.
Apt. A-3 Trinity Bldg.
West Chester, PA 19382

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 (484-266-0699) 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 484-266-0699
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.**