# Observations

A Monthly Publication Of The
CHESTER COUNTY ASTRONOMICAL SOCIETY

*Vol. 17, No. 3* *March 2009*


## In This Issue



## Membership Renewals Due

| | |
|---|---|
| 03/2009 | Cini<br>Dougherty<br>LaFrance<br>Molloy<br>Morgan<br>Spackman |
| 04/2009 | Baudat<br>Bower<br>Popovich<br>Imburgia |
| 05/2009 | Armore<br>Devoe<br>Fletcher<br>Kutta<br>Long, Jr.<br>Welch |

## CCAS Upcoming Nights Out

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

- On Wednesday March 4th we have a private "night out" starting at 7:00 pm at West Bradford Elementary School for Cub Scout Pack 152. We expect about 25 scouts and various parents. This will be a big group so we need several telescopes for this event. West Bradford Elementary School is south of Thorndale, a few miles off Marshallton Thorndale Road.
- We have a "night out" for a small group of Brownies on Saturday March 7th at the scoutmaster's house near Hibernia Park. This is a small group, but if you can help out, please contact Kathy Buczynski. She is coordinating this event. There will be about 10 scouts and their parents attending.
- On Saturday, April 4th, at 8:00 PM, CCAS and West Chester Recreation are hosting a night under the Moon and stars at Hoopes Park . This event is part of a world wide event called The 100 Hours of Astronomy, celebrating 2009 as the International Year of Astronomy.

## Important March 2009 Dates

**4th** • First Quarter Moon, 2:46 AM EST.

**8th** • Daylight Saving Time begins at 2 AM ET.

**10th** • Full Moon, 10:38 PM EDT.

**18th** • Last Quarter Moon, 1:48 PM EDT.

**20th** • Equinox (northern spring/southern autumn begins), 8 AM EDT.

**26th** • New Moon, 12:06 P.M EDT.



## Spring 2009 Society Events

### March 2009

3rd • Introductory Astronomy Class: The Moon, Room 113, Boucher Building, WCU. Class starts at 7:00 p.m.

4th • PA Outdoor Lighting Council monthly meeting.

7th • Private "night out" with local Brownies pack near Hibernia Park, Coatesville.

10th • DVD Lecture Series: "Special Relativity and Interstellar Travel", at 7:00 p.m.

10th • CCAS Monthly Meeting, Room 113, Boucher Building, WCU. The meeting starts at 7:30 p.m. CCAS Guest Speaker: Dr. Mark Gagné, "Star Formation." Constellation of the Month: Libra, by Robert Fellwock.

13th • West Chester University Planetarium Show: "Dethroning the Earth", Schmucker Science Building.

17th • Introductory Astronomy Class: The Other Kids on the Block, Room 113, Boucher Building, WCU. Class starts at 7:00 p.m.

27th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date March 28th). The observing session starts at sunset.

31st • Introductory Astronomy Class: Planispheres / Star Charts, Room 113, Boucher Building, WCU. Class starts at 7:00 p.m.

### April 2009

4th • Chester County Astronomical Society and West Chester Recreation host a "night out" at Hoopes Park starting at 8:00 p.m.

7th • Introductory Astronomy Class: The Days of Stars' Lives, Room 113, Boucher Building, WCU. Class starts at 7:00 p.m.

8th • PA Outdoor Lighting Council monthly meeting.

10th • West Chester University Planetarium Show: "Fire in the Sky", Schmucker Science Building.

14th • CCAS Monthly Meeting: A field trip to Spitz, Inc. in Chadds Ford, PA.

21st • Introductory Astronomy Class: West Chester University Planetarium Show, Schmucker Science Building, WCU. Class starts at 7:00 p.m.

24th • CCAS Monthly Observing Session, Myrick Conservancy Center, BVA (inclement weather date April 25th). The observing session starts at sunset.

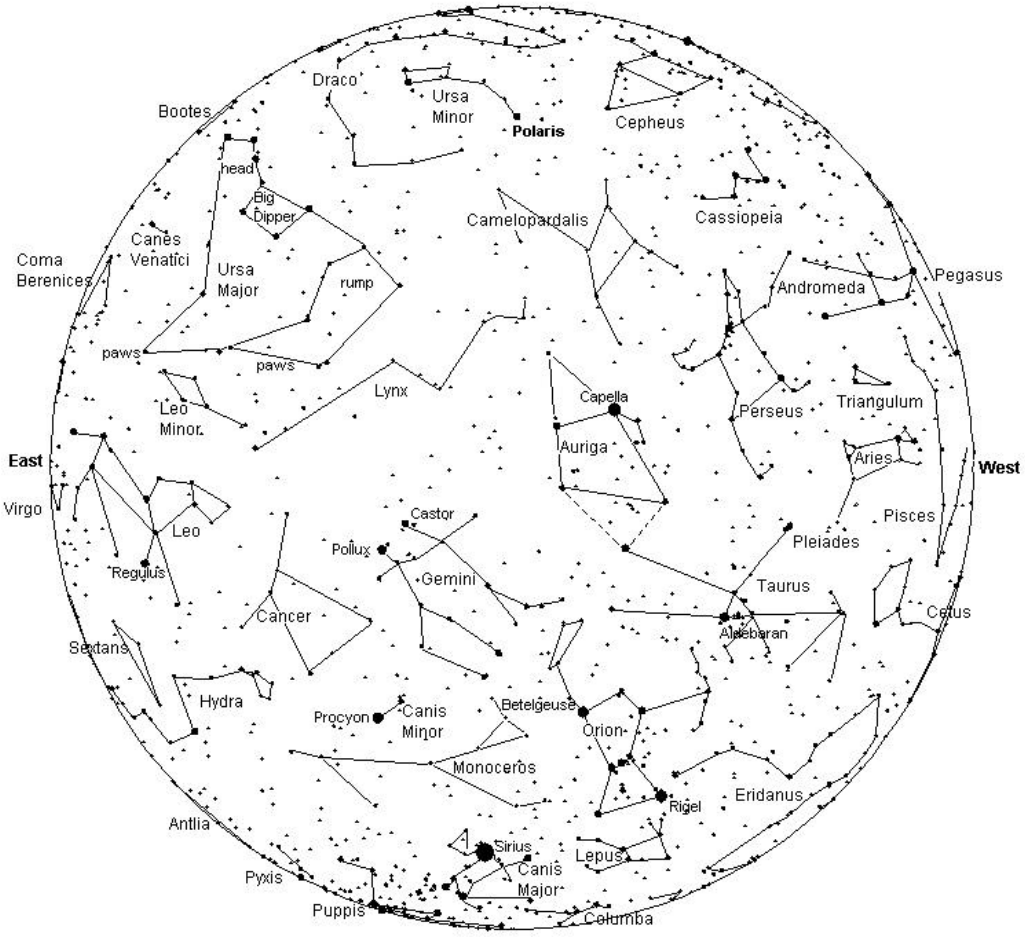
## Minutes of the February 10, 2009 meeting of the CCAS

- Approximately 25 members and guests were in attendance.
- Video presentation: *The Search for Extraterrestrials* DVD was shown.
- Program – *Galaxies like Grains of Sand* by Don Knabb.
- Constellation of the month – Aries presented by Jim Anderson.
- Observing awards – Bob Popovich was presented with his Lunar Club award. Yeah, Bob, our newest lunatic!
- Website – There have recently been issues with our e-mail distribution list. The problems are due to the company that hosts our web site and are being addressed.
- Finance – Bob reports that all is fine with the club finances.
- Observing – Our next regular observing session at BVA is replaced by a star party at Nottingham Park in southern Chester County. There is also a Cub Scout star party at West Bradford Elementary School on Wednesday March 4th and a Girl Scout star party on Saturday March 7th at the home of the pack leader.
- Library – no report.
- Secretary – The minutes of the January meeting were published in the February newsletter.
- Education – The telescope workshop has been postponed until April 18th or May 30th at BVA. The Introductory Astronomy classes begin on February 17th.
- Public Relations – no report.
- Newsletter – John requests all members to submit articles, pictures, book reviews, etc. to him for the newsletter.
- Programs – Constellations of the Month are covered for the spring meetings as are programs. The April meeting will be a field trip to Spitz Scientific.
- Elections – We need volunteers to call the membership to see who is interested in running for an office. The terms are two years.
- Franklin Institute Galileo exhibit – the Franklin Institute will host an exhibit of Galileo's instruments and accomplishments starting April 4th. The Institute is looking for people to serve as docents for the exhibit. Information can be found at the Franklin's website: www.fi.edu.

## The Sky Over Chester County

March 15, 2009 at 9:00 p.m. EDT

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 | | |
|---|---|---|---|---|---|
| 03/01/2009 | 6:34 a.m. EST | 5:53 p.m. EST | First Quarter | 03/04/2009 | 2:46 a.m. EST |
| 03/15/2009 | 7:12 a.m. EDT | 7:08 p.m. EDT | Full Moon | 03/10/2009 | 10:38 p.m. EDT |
| 03/31/2009 | 6:46 a.m. EDT | 7:24 p.m. EDT | Last Quarter | 03/18/2009 | 1:48 p.m. EDT |
| | | | New Moon | 03/26/2009 | 12:06 p.m. EDT |

**March 2009 Observing Highlights**
*by Don Knabb, CCAS Observing Chair*

| | |
|---|---|
| March 4 | First quarter Moon, 2:46 a.m. |
| March 8 | Daylight savings time begins at 2:00 a.m. |
| March 8 | Saturn is at opposition. |
| March 10 | Full Moon, 10:38 p.m. |
| March 12-28 | Look for the zodiacal light in the evening sky between 1 and 2 hours after sunset |
| March 18 | Last quarter Moon, 1:47 p.m. |
| March 20 | Vernal Equinox spring begins at 7:44 a.m. |
| March 26 | New Moon 12:06 p.m. |

**The Planets:** Enjoy Venus during the first few weeks of March since late in the month it slips into the sunset and enters the morning sky for the rest of the year. When Venus disappears, aim your telescope at Saturn as the ringed planet rises in the east after sundown.

**Mercury:** Mercury is not well placed for viewing during March, although if you really try you can see it low in the sunrise glow early in the month.

**Venus:** Venus is catching up and overtaking us in our never ending (well, at least not for about 5 billion years) race around the Sun. Early in the month our sister planet is shining brightly reasonably high in the western sky but it dives into the glow of the sunset before month's end. This is a great opportunity to look at Venus with a telescope to see its waning crescent phase.

**Mars:** The red planet rises less than an hour before the Sun so you will need to make a definite effort to view Mars during March. Later this year Mars will be much easier to see.

**Jupiter:** The story is the same for Jupiter during March with the king of the planets rising just before the Sun throughout March.

**Saturn:** March is the best month of the year for viewing the ringed beauty Saturn! Saturn lies opposite the Sun on March 8 so it will be visible all night. Let it rise fairly high into the sky for the best view through the least amount of atmosphere.

**Uranus and Neptune:** Neither of the gas giants is well placed for viewing during March.

**Pluto:** Pluto is also poorly placed for viewing during March.

**The Moon:** Full Moon is on March 10th. According to Native Americans this is the Full Worm Moon. As the temperature begins to warm and the ground begins to thaw, earthworm casts appear. So maybe we should call this the Full Worm Poop Moon! The more northern tribes knew this Moon as the Full Crow Moon, when the cawing of crows signaled the end of winter; or the Full Crust Moon, because the snow cover becomes crusted from thawing by day and freezing at night.

**Constellations:** By 9:00 p.m. the twins of Gemini are high in the south as our friend Orion begins his dive into the west. Enjoy Taurus with bright Aldebaran and Auriga with Capella before they head below the horizon for the summer. In the east Leo the Lion is rising as he treads on Saturn with his hind foot.

**Messier/Deep Sky:** Looking outward from the center of our galaxy we can see a faint Milky Way and a number of open star clusters. Look in the south for the cluster M41 in Canis Major which during March is about as high as it gets in our sky. Head east and find M93 then take a trip north to find M46 and M47, all of which are open clusters.

**Comets:** Comet Lulin is well placed for viewing in the southeast in early March, passing below Cancer then Gemini. You'll need binoculars to see this 7th magnitude fuzz ball. For help go to spaceweather.com for charts or use the finder chart in the March issue of Astronomy.

**Meteor Showers:** There are no major meteor showers during March.

## Through the Eyepiece: Comet Lulin

*by Don Knabb, CCAS Observing Chair*

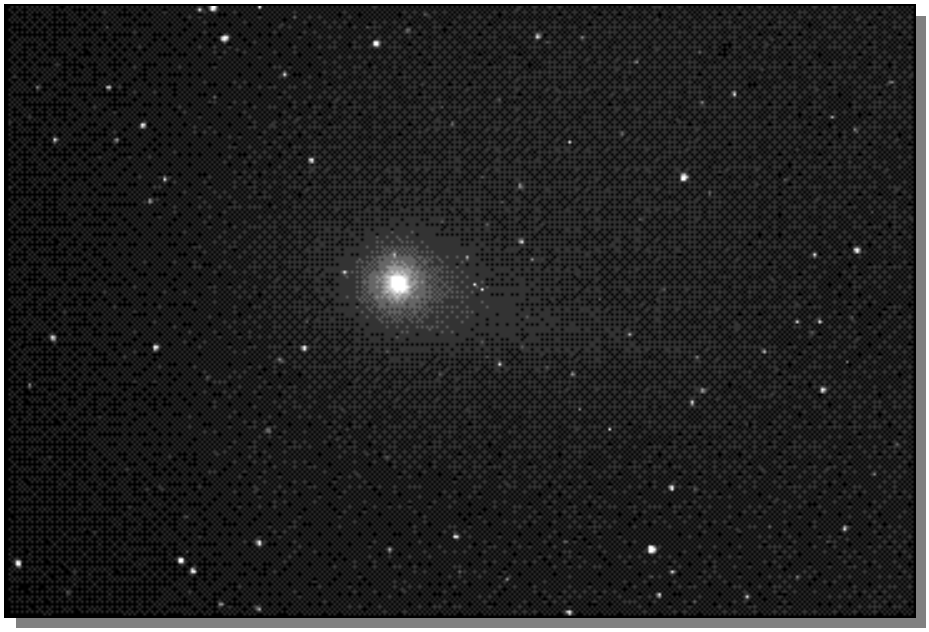
During early March a comet bright enough for observation in binoculars and telescopes will provide a fine skywatching target. This is Comet Lulin, one of those rare visitors from the outer solar system.

Comet Lulin was closest to Earth on February 24th and prime viewing was at that time, but there is still time to see this visitor from the outer solar system. I saw the comet in the early morning hours of February 21st as a gray fuzzy spot in regular binoculars. With large aperture binoculars or a telescope the comet should take on more shape and a hint of the tail should be visible. To the right is one frame from an incredible movie made by CCAS member Pete LaFrance.

Comet Lulin is the brightest since the surprising outburst of Comet Holmes more than 15 months ago and in the coming weeks will become favorably placed in the evening sky. It is easily observable in binoculars or small telescopes. Even though I could not see the comet naked eye, I found it immediately with binoculars.

Comets are visible because radiation from the sun releases gas and dust from the comet. That material then shines with reflected sunlight, creating a cloudy head, or coma, and sometimes one or two tails.

Even when it's at its very brightest, naked-eye observers at dark



*Comet Lulin, image by CCAS member Pete LaFrance. To see the animation, visit Pete's website at http://www.plafrance.org/*

sites will see Comet Lulin as resembling only a dim, fuzzy star. In binoculars, or a small telescope the comet may resemble an apple on a stick. That is, the comet's diffuse head or coma should appear round and somewhat condensed toward its center, with perhaps a tinge of blue or green, while a narrow tail of gas extends out to the northwest.

In addition, telescopic observers should also look for a "spike" of light, pointing in a direction opposite to the tail. This strange effect, called an "antitail," is caused by a thin sheet of dust that is expelled by the comet but normally is visible for a brief interval when the Earth passes through the comet's orbital plane.

Strangely, this comet is traveling almost exactly along the ecliptic — backward! The comet's nearly parabolic orbit indicates that it has never much interacted with the planets at all. Yet its orbital inclination is 178.4°, meaning that it's orbiting in the opposite direction from the planets just 1.6° from the ecliptic plane.

Comet Lulin crosses from Leo into Cancer at the beginning of March and, having passed opposition, is now best seen in the evening hours. But observers will have to contend with moonlight from about March 1st through 11th.

The night of March 5th sees the 6th-magnitude comet within 2° of Delta (d) Cancri and the Beehive Cluster, M44. But the Moon is also nearby.

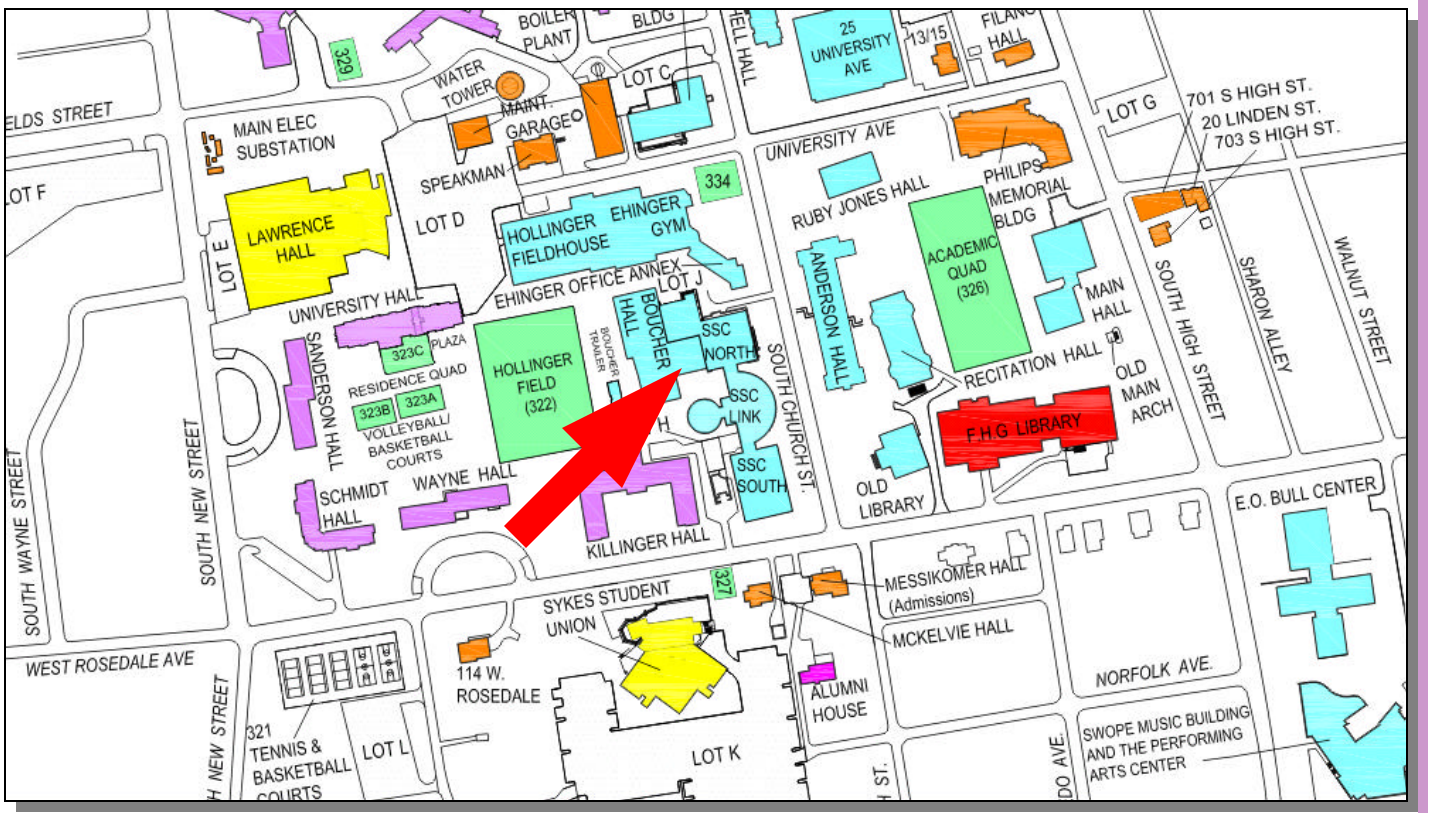
Another conjunction occurs on

*(Continued on page 7)*

# *CCAS Directions*

## West Chester University Campus

The monthly meetings (September through May) are held in Room 113 in Boucher Hall, 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).




## Astronomy Class Changes

The sequence of the first two March classes has been reversed. The class order is as follows:

**March 3rd, 2009: "The Moon"**
*Taught by Bob Popovich*
Learn how the Earth/Moon/Sun work together to create eclipses, why we only see one side of the Moon, why we see phases of the Moon; learn to see different patterns on the Moon's face when full.

**March 17th, 2009: "The Other Kids on the Block"**
*Taught by Ed Lurcott*
Learn how the planets move in the Solar System, it's relative size and what planets are visible with the naked eye and why.

## *CCAS Membership Information and Society Financials*

### Treasurer's Report
*by Bob Popovich*

**Jan. 2009 Financial Summary**

| | |
|---|---|
| Beginning Balance | $1,926 |
| Deposits | $164 |
| Disbursements | $244 |
| Ending Balance | $1,846 |

### Welcome New Members!

This month we welcome a new member to the Society: Cecilia Piehl from Chesterbrook. 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.

## Comet Lulin

*(Continued from page 5)*

March 16th when the comet, now around 7th or 8th magnitude but in a dark sky (and best seen in early evening), is 1° from Delta Geminorum.

As Comet Lulin recedes, its passage across our sky will slow. By May's end it will be lost in the afterglow of sunset. Comet Lulin won't return again to the inner solar system for more than a thousand years, if ever.

The comet was discovered at Lulin Observatory in Taiwan in July 2007 as part of the Lulin Sky Survey project to explore the various populations of small bodies in the solar system, especially objects that possibly could pose a hazard to the Earth. As such, the comet has been christened Comet Lulin, more formally known to astronomers as Comet C/2007 N3.

The photo to the right is one of the best that I have seen of Comet Lulin. It was taken by amateur astronomer Jack Newton from his backyard observatory in Arizona. "My retired eyes still cannot see the brightening comet," says Newton, "but my 14-inch telescope picked it up quite nicely."

The story of the discovery of the comet is quite interesting. In 1996, a 7-year-old boy in China bent over the eyepiece of a small telescope and saw something that would change his life--a comet of flamboyant beauty, bright and puffy with an active tail. At first he thought he himself had discovered it, but no, he learned, two men named "Hale" and "Bopp" had beat him to it. Mastering his disappointment, young Quanzhi Ye resolved to find his own comet one day.

And one day, he did.

On a summer afternoon in the summer of 2007, Ye, now 19 years old and a student of meteorology at China's Sun Yat-sen University, bent over his desk to stare at a black-and-white star field. The photo was taken nights before by Taiwanese astronomer Chi Sheng Lin on "sky patrol" at the Lulin Observatory. Ye's finger moved from point to point--and stopped. One of the stars was not a star, it was a comet, and this time Ye saw it first.

Somewhere this month, Ye imagines, another youngster will bend over an eyepiece, see Comet Lulin, and feel the same thrill he did gazing at Comet Hale-Bopp in 1996. And who knows where that might lead...?

"I hope that my experience might inspire other young people to pursue the same starry dreams as myself," says Ye.

For sky charts to find this rare comet go to the Sky and Telescope website listed below in the article credits, or visit the website spaceweather.com which posts daily sky charts for Comet Lulin.

*Credits:*
*http://www.space.com/spacewatch/090206-ns-comet-lulin.html*
*http://www.skyandtelescope.com/observing/highlights/35992534.html*
*http://science.nasa.gov/headlines/y2009/04feb_greencomet.htm*
*http://www.astrodrayer.com/lulin*

*Photo by Jack Newton, Arizona Sky Village Portal. Used with permission of the photographer.*

## Where did all these gadgets come from?!

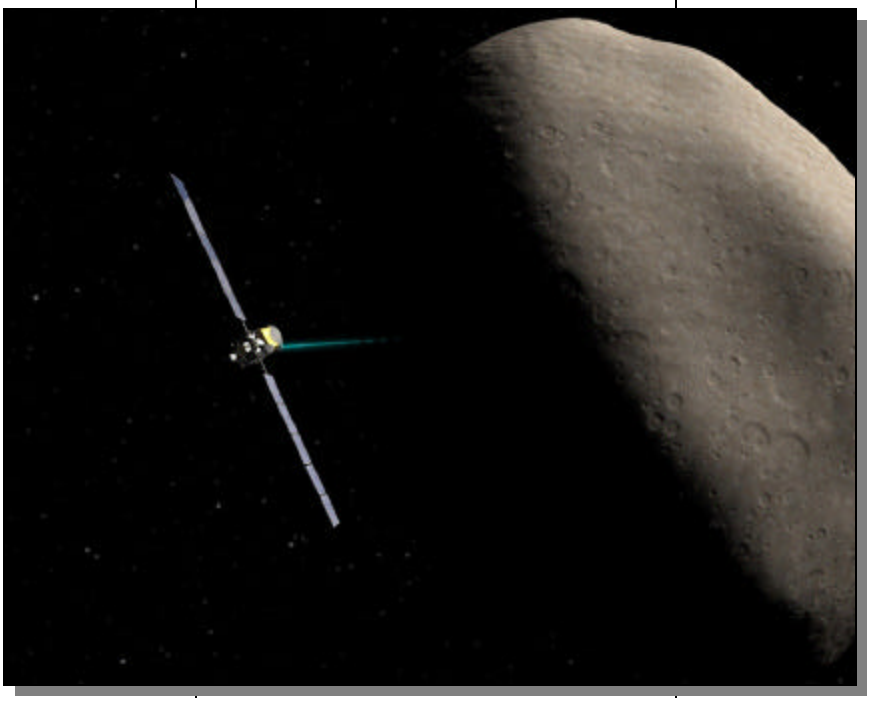
*Ion propulsion. Artificial intelligence. Hyper-spectral imagers.* It sounds like science fiction, but all these technologies are now flying around the solar system on real-life NASA missions.

How did they get there? Answer: the New Millennium Program (NMP). NMP is a special NASA program that flight tests wild and far-out technologies. And if they pass the test, they can be used on real space missions.

The list of probes that have benefited from technologies incubated by NMP reads like the Who's Who of cutting-edge space exploration: Spirit and Opportunity (the phenomenally successful rovers exploring Mars), the Spitzer Space Telescope, the New Horizons mission to Pluto, the Dawn asteroid-exploration mission, the comet-smashing probe Deep Impact, and others. Some missions were merely enhanced by NMP technologies; others would have been impossible without them.

"In order to assess the impact of NMP technologies, NASA has developed a scorecard to keep track of all the places our technologies are being used," says New Millennium Program manager Christopher Stevens of the Jet Propulsion Laboratory.

For example, ion propulsion technology flight-tested on the NMP mission Deep Space 1, launched in October 1998, is now flying aboard the Dawn mission. Dawn will be the first probe to orbit an asteroid (Vesta) and then travel to and orbit a dwarf planet (Ceres). The highly efficient ion engine is vital to the success of the 3 billion mile, 8 year journey. The mission could not have been flown using conventional chemical propulsion; launching the enormous amount of fuel required would have broken the project's budget. "Ion propulsion was the only practical way," says Stevens.



*Dawn will be the first spacecraft to establish orbits around two separate target bodies during its mission—thanks to ion propulsion validated by Deep Space 1.*

In total, 10 technologies tested by Deep Space 1 have been adopted by more than 20 robotic probes. One, the Small Deep Space Transponder, has become the standard system for Earth communications for all deep-space missions.

And Deep Space 1 is just one of NMP's missions. About a half-dozen others have flown or will fly, and their advanced technologies are only beginning to be adopted. That's because it takes years to design probes that use these technologies, but Stevens says experience shows that "if you validate experimental technologies in space, and reduce the risk of using them, missions will pick them up."

Stevens knew many of these technologies when they were just a glimmer in an engineer's eye. Now they're "all grown up" and flying around the solar sys-

*(Continued on page 9)*

## All These Gadgets

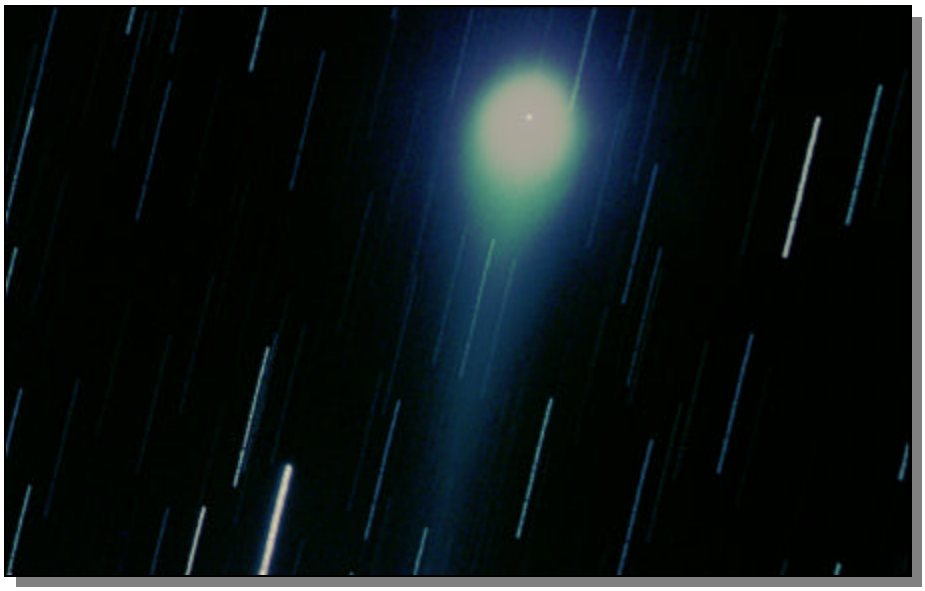
*(Continued from page 8)*

tem. It's enough to make a program manager proud!

The results of all NMP's technology validations are online and the list is impressive: nmp.nasa.gov/TECHNOLOGY/scorecard/scorecard_results.cfm. For kids, the rhyming storybook, "Professor Starr's Dream Trip: Or, How a Little Technology Goes a Long Way" at spaceplace.nasa.gov/en/kids/nmp/starr gives a scientist's perspective on the technology that makes possible the Dawn mission.

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

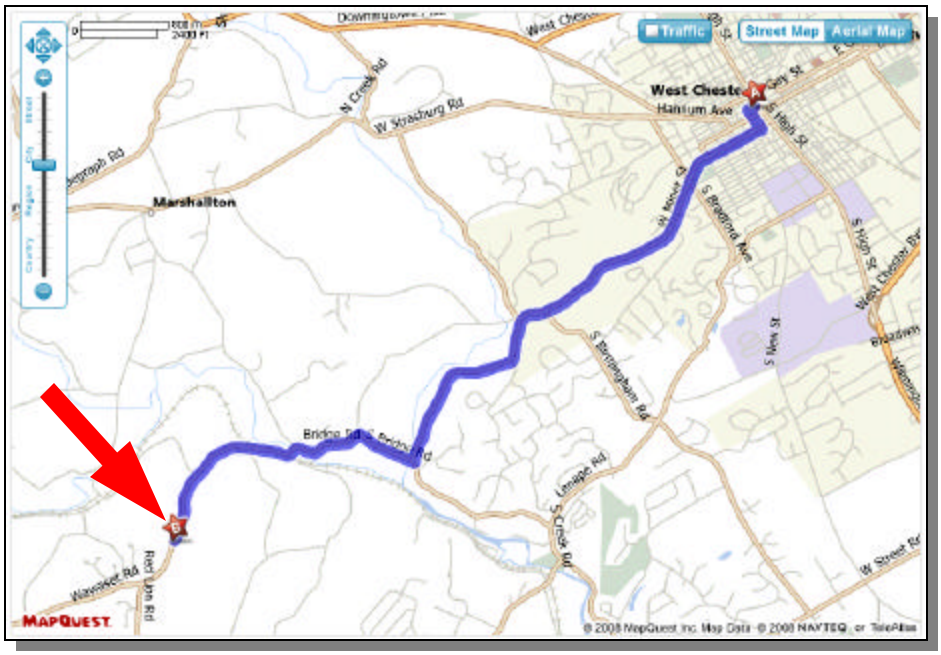
## CCAS Member Original Astrophotography



***By Dr. Gaston Baudat.***

This photo was taken on Tuesday, February 24th, 2009, at 11:42 PM EST from his backyard observatory in Glenmoore PA. 45 images of 1 minute each, stacked and aligned with MaxImDl. The field of view is 1 degree 30 minutes. Piggyback "Eon" apochromat refractor 80mm f/6.2 on a Celestron C11/CGE mount. Imager: SBIG ST2000XCM and Guider: Home made on axis dichroic auto-guider with "Meade" B/W DSI imager. The green color comes from the fluorescence of the cyanogen (CN) and diatomic carbon (C2) gases illuminated by the sun light.

## *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 Member Earns AL Lunar Club Award

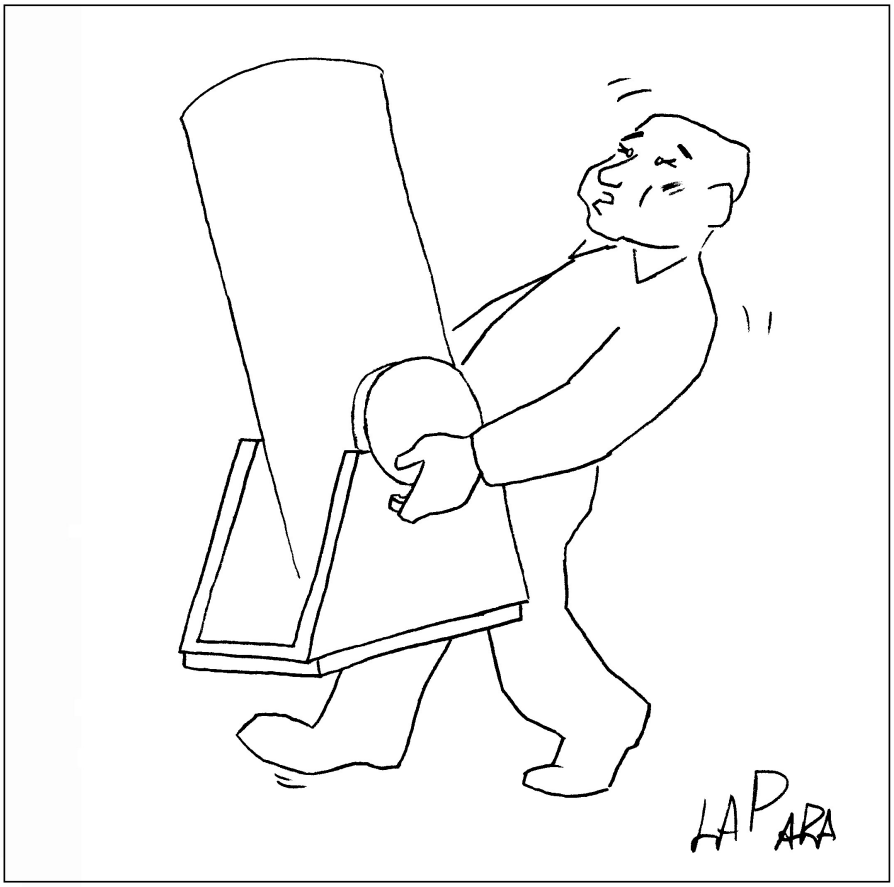
*by Kathy Buczynski*

CCAS President Kathy Buczynski presented the Astronomical League's Lunar Club Award to Bob Popovich, society treasurer, on February 10th, 2009. Bob is the 646th amateur astronomer to earn the certificate. The award is earned by viewing and documenting 100 features on the Moon, broken down into 8 naked eye, 46 binocular, and 36 telescopic features. To learn more about the award, visit www.astroleague.org.

*CCAS Treasurer Bob Popovich with his award and President Kathy Buczynski*

## Nicholas's Cartoon Corner

*by Nicholas La Para*



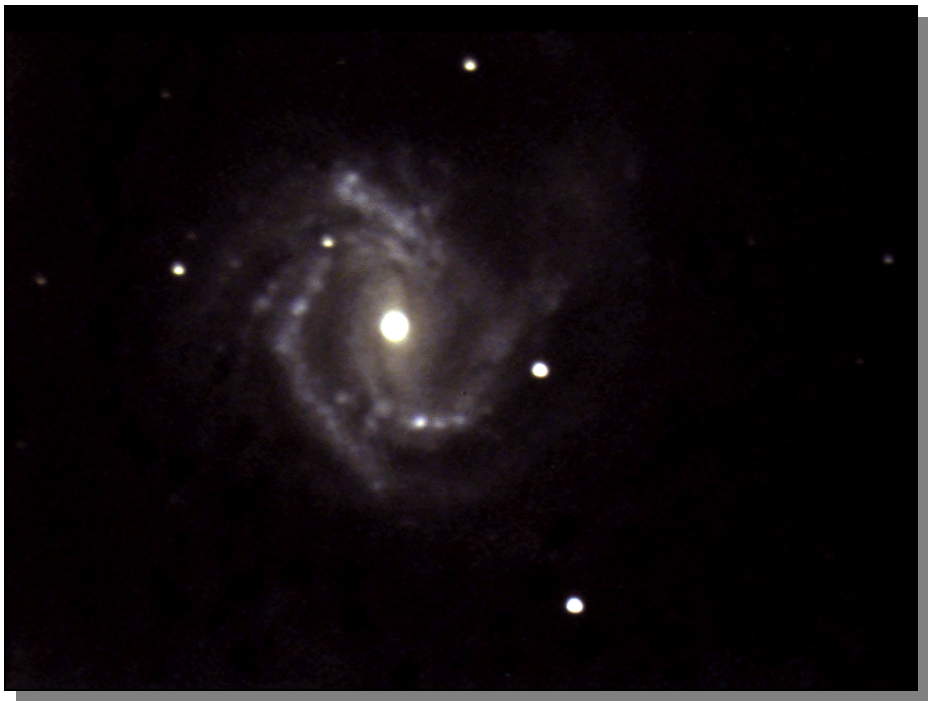

"WHO SAID GRAVITY IS THE WEAKEST OF THE FOUR FORCES?"

## More CCAS Member Astrophotography

***By Dave Hockenberry.***

Galaxy M61 in the Virgo Cluster, through 10" LX200R, f/10, no filters, shot early in the morning on February 25th, 2009 using a Meade DSI2 color camera, FITS.

Photo consists of a stack of 27 images, each 2 minutes, with dark subtracted in Envisage. Images stacked in AIP 4 WIN and LRGB merged/level and color adjusted in Photoshop.



# 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:

**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 **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:

**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:

**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**

**www.starrynightlights.com**

★ ★ ★ ★ ★

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**

**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**

**www.skiesunlimited.net**

★ ★ ★ ★ ★

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# *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:

**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**: | Kathy Buczynski<br>610-436-0821 |
| **Vice Pres:** | Jim Anderson<br>610-857-4751 |
| **ALCor and Treasurer:** | Bob Popovich<br>610-363-8242 |
| **Secretary:** | Don Knabb<br>610-436-5702 |
| **Librarian:** | Linda Lurcott Fragale<br>610-269-1737 |
| **Observing:** | Don Knabb<br>610-436-5702 |
| **Education:** | Kathy Buczynski<br>610-436-0821 |
| **Webmaster and Newsletter:** | John Hepler<br>484-266-0699 |
| **Public Relations:** | Deb Goldader<br>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: 610-363-8242**
**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.**