



October-November-December 2007 Volume XXXVII, Issue 8

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Comet Holmes, the Enigmatic Comet of 2007



Image Credit: A. Dyer

Recent image of Comet Holmes showing its unique nucleus, extended coma and foreshortened tail. Calculations put the comet's diameter at 1.4 million kilometers, larger than the sun!

Upcoming Events and Highlights

- Phil Harrington, Sat, Dec 1st, 7:00 PM; Lecture and Book Signing
- Bart Fried, Sat, Dec 8th; 3 Lectures starting at 8:00 PM
 - Where in the hell is Henry Rowland?
 - The Harvard Plate Digitizer Project
 - Wadsworth and the First Curved Plate Cameras
- Annual Holiday Dinner And East End Brass In Concert, Sat., Dec 15th 5:00 PM;
- New Year's Eve Under the Stars, Mon., Dec 31st, 8:00 PM
- Custer's Winter *Introduction to Astronomy* Course Offerings

Please see inside for additional details

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Editor's Column

Tom Madigan, Editor

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Cutoff for submissions is the 15th of the month preceding publication

Visit the new Custer Website at
<http://www.custerobservatory.org>
Custer Comment Archive:
<http://www.tommadigan.net/custer>

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"I have loved the stars too fondly to be fearful of the night."

Sarah Williams

Please excuse the late publication of the Custer Comment. Since November is almost at a close, I have included the December 2007 "Heavenly Events", distributed every month by Bob Chapin as well as the highlights for December 2007 and beyond. Since my lecture at the Jamboree, I have been doing nothing else but working on my graduate studies and teaching at 3 separate institutions of higher learning. This issue of the Custer Comment is rather brief due to these severe time constraints, among other things. Additionally, I have been directed by a majority of Custer's Board of Directors to implement a number of changes to the Custer Comment, not the least of which is its size and format. Rather than take the time to fully incorporate these changes and delay publication any longer, I have put together an issue that includes just the essentials with the full measure of the Board's changes to be implemented in the next issue. Jamboree coverage, images, photos, ongoing projects and research activities at Custer, as well as any items submitted for publication since the last issue (September 2007) of the Custer Comment, will be published in the next issue or in as timely a fashion as is humanly possible.

Best,
Tom

Tom Madigan, Editor
Fellow, RAS

"If the Stars should appear one night in a thousand years, how would men believe and adore; and preserve for many generations the remembrance of the city of God which had been shown! But every night come out these envoys of beauty, and light the universe with their admonishing smile"

~Ralph Waldo Emerson

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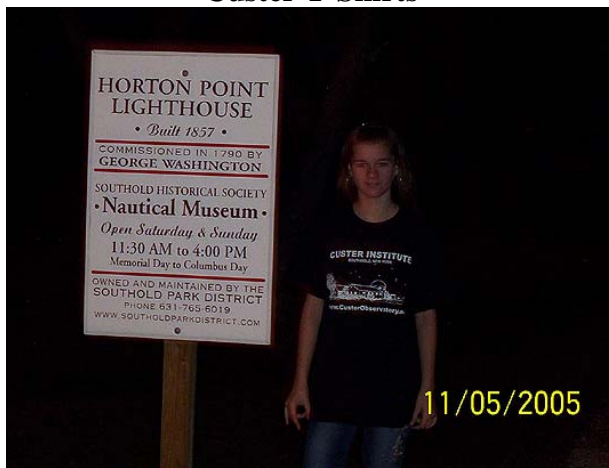
Paypal to CusterPaypal@yahoo.com followed by an email to this editor indicating the number of copies ordered and shipment instructions. Before shipment, I will confirm with Barbara that payment has been made. All my contact info is always published on page 3.

An Evening With John Dobson

VHS or DVD format, \$10.00, \$3.75 S & H

On September 17, 2005, noted sidewalk astronomer and cosmologist, John Dobson, visited Custer. He presented his classic cosmic slide show, packed with information and delivered with inimitable wit; he shared stories about his life as a monk, secretly grinding mirrors, making telescopes and introducing the public to the wonders of the night sky. Board member, Rich Huber, filmed this memorable event and has made copies on VHS and DVD. Running time is approx. 90 minutes. The cost: \$10 with 25% of the proceeds going to John Dobson's San Francisco Sidewalk Astronomers Association and a nominal \$3.75 for shipping and handling. You can pay for your tape using Paypal by sending \$13.75 to CusterPaypal@yahoo.com or by sending a check or money order (made payable to *Custer Institute*) to: Dobson at Custer, P.O. Box 1204, Southold, New York 11971. Please specify whether you would like VHS or DVD. If you have any questions, please contact Donna McCormick at mccormick@scientific-consultants.com.

Custer T-Shirts



Image, courtesy Tom Madigan

The editor's daughter, Kaitlin, sporting a Custer T-Shirt at Horton Point Lighthouse on Jamboree '05 night! The shirts are 100% heavy-weight cotton, machine-washable, and are available in adult sizes S-M-L-XL-XXL. The cost is \$12 plus \$3.75 S & H and the shirts are available only while supplies last. Custer would also like to *thank the East End Shirt Company* in Port Jefferson for their generosity and for having done an excellent job in producing such fine quality shirts on such short notice.

We have Susan Harder's patented & dark sky friendly **PARSHIELD®** Outdoor Floodlight Shields

for PAR 38 type bulbs. Controls glare, reduces light trespass & allows you to direct the light where you need it. Two shields per box in your choice of Off White or Bronze finish. \$20.00, tax incl.

ASTRONOMY FOR ALL AGES

By
Phil Harrington & Ed Pascuzzi

The Gift Shop still has a number of copies of this latest volume by Phil Harrington with co-author Ed Pascuzzi. Get your copy while supplies last. At just \$20, this is a real bargain! As an added bonus, copies are signed by Ed.

PARALLAX

By
Alan W. Hirshfeld

We also have a limited number of copies of this excellent volume by 2003-Jamboree guest speaker Alan Hirshfeld. Quantities are limited so hurry and add this well-written and informative volume to your collection while supplies last.

Montauk Sunset Screensaver

PC compatible screensaver with musical accompaniment; please send a check in the amount of \$10, payable to Custer Institute, to this editors mailing address, published on the editor's page. Allow 7 - 10 days for your CD to arrive.

Heavenly Events To Watch For December 2007

“ Look out at the stars. Yes - cold space. Yes, we are so distant that the mind goes hollow to think it. But something is out there. Whatever our limits, we are led outward. We glimpse company. Each glittering point of light beckons: “There is something beyond.”

- William Stafford

Just as our northern hemisphere is sufficiently tilted so as to cause the start of another winter season, we will find ourselves involved in (GASP) another major planetary alignment! But again I prognosticate that we'll see ourselves through this linear fix as we have done many times before. Not participating are: lovely VENUS, well out of line in the morning sky but starting to sink toward the veil of dawn; SATURN, just now starting to retrograde back toward Regulus in Leo; and URANUS and NEPTUNE. Saturn rises around 10 PM by month's end and is due south around 4 AM. But within 5 days of the winter solstice MERCURY, JUPITER and the demoted PLUTO will

traverse the solar farside and MARS will share its bit of the night sky with the FULL MOON, completing the alignment (including SUN and EARTH). And Mars will be at closest approach to Earth since 2005! Seriously, though, all you'll need to do is enjoy Mars by telescope and wait for the alignment to go away.

- 1 The last quarter Moon shares the predawn sky with Saturn this morning.
- 3 Algol, β (Beta) Persei, is in mid-eclipse at 6:04 PM.
- 5 The waning crescent Moon, Venus and the star Spica make a fine little triangle in the predawn sky.
- 9 Earliest sunset around this date at Long Island's latitude. Latest sunrise won't occur until about January 1.
- 13 Look for Geminid meteors from late evening to dawn tonight and tomorrow night, with moonset taking place in time to assure dark skies.
- 14 On December 14, 1972 Apollo 17's ascent stage of the LM Challenger lifted off the Moon. There have been no human visitors there in the 35 years since then.
- 16 Edward Emerson (E.E.) Barnard was born on December 16, 1857, 150 years ago. He was a leading astronomer at Lick and Yerkes Observatories. He found many comets and catalogued dark nebulae. And think Barnard's Loop, Barnard's Galaxy (NGC 6822) and Barnard's Star!
- 17 Mercury passes behind the Sun today. Pluto will do likewise on the 20th.
- 19 Mars is at its closest approach to the Earth (relatively speaking) today, about 54.76 million miles away. Its peak brightness this time around is -1.6 magnitude, slightly brighter than Sirius. Its ochre disk is 16 arcseconds across as seen by telescope. As Mars passes due south tonight it will be only 14° south of the zenith at Long Island's latitude.
- 20 Retrograde begins for Saturn among the stars of Leo. Also, the star Algol is in mid-eclipse at 10:58 PM, and again at 7:48 PM on the 23rd.
- 22 Winter begins at 1:08 AM this morning.
- 23 Jupiter becomes the third planet/ex-planet to pass behind the Sun in a week's time. And tonight the Full Cold Moon and bright Mars team up and drift westward together all night, blazing a trail for Santa.
- 24 Mars reaches opposition as Earth passes it in our respective orbits.
- 27 The waning gibbous Moon rises ahead of Saturn late this evening, and after Saturn tomorrow night.

Prepared by Robert Chapin

Highlights for December

More events will be added and details provided about those listed below, so please check our website for the latest info <http://www.CusterObservatory.org> If you have any questions, don't hesitate to contact CusterDonna@yahoo.com or call 631-765-2626.

In-Service Credit Upon request, letters will be provided to those attending instructional events.

Admission Suggested donations are listed below. Unless otherwise stated, children accompanied by adults are admitted for **FREE**.

After the events, all are welcome to remain for refreshments and guided tours of the night sky through Custer's telescopes. The observatory is open every Saturday evening from dusk until midnight.

Sat., December 1, 7:00 PM

So You Want To Buy A Telescope? Lecture & Book-Signing

Are you thinking of buying a telescope this holiday season, either for yourself or for someone else? Don't make the same mistake that others make every year by purchasing the wrong one! This lecture will save you time, money, and frustration as you'll learn how to identify a high quality telescope from the rest. Telescope jargon will be defined and consumer tips offered. Lecturer: Phil Harrington has authored numerous articles and books, most recently *Star Ware* (4th edition). He teaches astronomy at Dowling College and Suffolk County Community College. After the lecture, he'll be happy to autograph his books (which will be available for sale). Suggested Donation: \$10 for Members; \$13 for Non-Members; \$5 Students with ID. In-Service Credit: Letters provided upon request.

Sat., December 8, 8:00 PM

An Evening With Bart Fried

In the late 1980s, a small group of collectors recognized a need and the Antique Telescope Society was born. Co-founder, Bart Fried, and his colleagues have done much over the years to preserve these historical objects across the world. Tonight he will give three brief talks:

Where in the hell is Henry Rowland? America's premier physicist in the latter 1800s was Henry Augustus Rowland, whose ruling engine produced the world's finest diffraction gratings. Those gratings were the heart of spectroscopes in virtually every major observatory in the world. Thought to be buried under the ruling engine pier in Rowland Hall at Johns Hopkins University, his remains went missing...until now.

The Harvard Plate Digitizer Project. Digitizing Harvard's 600,000+ plates proved to be a formidable task that is now being tackled by a dedicated group of preservationists.

Wadsworth and the First Curved Plate Cameras. Most astronomers think of Bernhard Schmidt when they think of solving the Petzval Field Curvature problem, but a solution was found decades earlier; that solution, however, was never successfully implemented. What were the reasons for its invention and ultimate failure?

Suggested Donation: \$10 Members; \$13 Non-Members; \$5 Students with ID. In-Service Credit: Letters provided upon request.

Sat., December 15, 5:00 PM

Annual Holiday Dinner And East End Brass In Concert

Chef Chuck Cardona will be back in the kitchen cooking up a holiday feast, but you're welcome to bring your favorite dish or dessert to add to the buffet. At 8:00, the highly acclaimed ensemble, East End Brass, will perform selections ranging from classical to holiday tunes. Grab Bag: bring a gift, get a gift (maximum value \$10, please); separate grab bags for children and adults. Suggested donation; \$15 Members & their guests; \$20 Non-Members; \$10 Students and Seniors. Kids under 14: FREE! To reserve, email CusterDonna@yahoo.com or call 631-765-2626.

Mon., December 31, 8:00 PM

New Year's Eve Under The Stars: Dining, Dancing, Music & More!

Now in its third year, there's no better way to celebrate the passing of the old and welcome in the new. A home-cooked buffet (you're welcome to bring your favorite dish or dessert to add to the table), dancing to live jazz by Ahmad Ali and Friends, raffle, and more. Suggested donation: \$15 Custer Members & their guests; \$20 Non-Members; \$10 Students and Seniors. Kids under 14: FREE! To reserve, email CusterDonna@yahoo.com or call 631-765-2626.

Compiled and edited by Donna McCormick

Highlights for January 2008 and Beyond

Sat., January 19, 7:00 PM

How To Use Your Telescope

Did you just receive a new telescope as a holiday gift? Or is there one gathering dust in the closet because you don't know how to use it? Perhaps you have been using your telescope but it doesn't seem to be working quite right and you're asking yourself: "Is it me or the equipment?" This lecture and workshop will provide all the answers. You'll learn all you ever wanted to know about telescopes and receive practical information that will help you get set up and observing. After the lecture, there will be an opportunity for you to receive hands-on help from the instructor and Custer's Observatory Staff. Instructor: Jeff Norwood is a veteran amateur astronomer, telescope mechanic, & owner of Camera Concepts in Patchogue. Suggested Donation: \$10 Custer Members; \$13 Non-Members; \$5 Students w/ ID.

Sat., January 26, 2:30 and 3:30 PM

Starlab Portable Planetarium Shows

A planetarium is one of the best ways to quickly become familiar with the night sky. StarLab presenter and storyteller, Andi Pisacano, will introduce you to the constellations and other celestial bodies, and tell you the myths associated with them. Two shows each day; call or check website to confirm times. Suggested donation: \$5 Child (13 and under), \$8 Adult, \$20 Family (2 adults and children) per show.

Sat., February 9, 8:00 PM

The Celan String Quartet In Concert

A performance of classical, Winter themes by this outstanding quartet featuring violinist Anne Verticchio. The repertoire will include: Vivaldi's Concerto No. 4 in F minor, Op. 8, "Winter" from the *Four Seasons*; Schubert's String Quartet in D minor (D. 810), "Death and the Maiden"; Mozart's String Quartet No. 4 in C Major (K. 157); and Corelli's Concerto Grosso Op. 6 VIII "Per la notte di Natale." Vivaldi's "Winter" will be performed against an illustrated (slide show) backdrop. Suggested donation: \$13 Members, \$15 Non-Members. Email CusterDonna@yahoo.com or call 631-765-2626 to reserve. For questions about the program or to contact the quartet, call 631-591-2198.

Every Last Saturday Starlab Portable Planetarium Shows

Sat., February 23, 2:30 and 3:30 PM

Starlab Portable Planetarium Shows

A planetarium is one of the best ways to quickly become familiar with the night sky. StarLab presenter and storyteller, Andi Pisacano, will introduce you to the constellations and other celestial bodies, and tell you the myths associated with them. Two shows each day; call or check website to confirm times. Suggested donation: \$5 Child (13 and under), \$8 Adult, \$20 Family (2 adults and children) per show.

Ongoing

Every Saturday evening, from dusk until midnight, Custer is open to the general public. The Institute's volunteer Staff provide guided tours of the night sky (weather permitting) via laser pointers and powerful telescopes, and are more than happy to answer all questions. Group visits by classes, scouts, and others are welcome (contact CusterDonna@yahoo.com to arrange). The facilities are also available for private functions.

For Stargazers

If you're wondering what's up in the sky, Custer's Observatory Director and Board Member, Jeffrey Owen Katz, Ph.D., now writes a monthly astronomy column in *Long Island Pulse* magazine. Observatory Staff Member, David Van Popering, writes one for NorthForkParents.com.

E Español

Sentado, Febrero 23, 8:00-9:30PM.

"Stargazing Para Los Principiantes"

Aprenda cuál está para arriba en el cielo de la noche y cómo encontrarlo por la estrella-lupulizacio'n, el uso de planispheres, y otros recursos. el Resistir-permiso, parte de la sesión estará pasado al aire libre para una demostración viva. Instructor: Jeffrey Owen Katz, Ph.D. es Director del Observatorio y de la Investigación de Custer. Donación sugerida: \$5.

Compiled and edited by Donna McCormick

Stony Brook Science Fridays

Astronomy Open Night
Friday, December 7, 2007; 7:30 PM
Room 001, ESS Bldg.

Prof. F. Douglas Swesty
Dept of Physics & Astronomy
Stony Brook University

Merging White Dwarf Stars

White dwarf stars are the end of the evolutionary line for normal stars of about one solar mass. Many times such stars are formed in binary systems where one star is in orbit around another. But what happens when the orbits of these stars decay and the two stars violently merge? Does a supernova occur? Is an extreme star formed?

In the next of the popular series Astronomy Open Night, Prof. Swesty will discuss how binary white dwarf systems are formed, why their orbits decay, and what happens when they merge.

Prof. Swesty has been associated with astronomy at Stony Brook for nineteen years, initially as a graduate student and then, after 5 years at the University of Illinois, returning as a faculty member. His research is on Neutron stars, how they form and how they behave in close binary systems. He lives with his family in E. Setauket.

Following the lecture, weather permitting, there will be a viewing session with the University's telescopes.

The Worlds of Physics
Friday, December 14, 2007; 7:30 pm
Room 001, ESS Bldg.

Prof. Michael Rijssenbeek
Dept of Physics & Astronomy
Stony Brook University

"The new 17-mile-long Microscope for Particle Physics and the Monsters we might see..."

Teams of thousands of engineers, technicians, and physicists are getting close to completing the construction of a new ultra-high energy particle accelerator, which will, they expect, find new building blocks of matter and forces. This is a world-wide effort, costing several billions of dollars, in which the USA is one of the largest single participants. The new accelerator will start operation in 2008 new the French-Swiss border at Geneva, Switzerland.

We will discuss how particle accelerators resemble powerful microscopes, and explore the expectations for exciting new discoveries, the anticipated and maybe completely unanticipated phenomena, to be revealed by this most powerful "microscope" ever.

"Expect the unexpected" may be the most compelling component of all.

Following the lecture, there will be refreshments and an opportunity for discussion.

To receive electronic notification of upcoming lectures and events at Stony Brook contact:
Sara Lutterbie (slutterbie@notes.cc.sunysb.edu)
Dept. of Physics & Astronomy
Stony Brook University
(631) 632-8757
or navigate to <http://www.astro.sunysb.edu/openight/opennite.html>

Introduction To Astronomy

Custer Institute's Winter 2008 Course Offerings

Saturdays, January 26th, February 2nd, 9th, 16th, 23rd and March 1st, 2008

Time: 5:00 - 6:30 PM

Session 1, Cosmology: Understanding The Universe

January 26th 2008

Coverage will include theories about the formation and nature of the cosmos: the Big bang theory, the expanding universe, dark energy & matter, relativity, string theory, and more.

Instructor: **Kenneth Lanzetta, Ph.D.**, is an observational astronomer at the Department of Physics & Astronomy, SUNY Stony Brook; his own original research has led to some very significant (and some say controversial) findings about the early Universe.

Session 2, To The Stars Through Rugged Ways

February 2nd 2008

How did astronomy get to where it is today? An historical look at how our current understanding of the universe evolved.

Instructor: **Sam Storch** has spent over four decades teaching astronomy at such institutions as the Hayden Planetarium & Nassau Community College. Fellow, International Planetarium Society; Secretary, Middle Atlantic Planetarium Society; active member, Astronomical Society of Long Island.

Session 3, The Sun And Stars

February 9th 2008

The nature and structure of our Sun, solar phenomena, classifications of stars and their life cycles.

Instructor: **Frederick Walter, Ph.D.**, Dept. of Physics and Astronomy, SUNY Stony Brook, has studied stellar evolution using the CHANDRA and NEWTON X-ray Observatories, the Hubble Space Telescope, and telescopes in Hawaii and Chile.

Session 4, The Planets

February 16th 2008

The kinds of planets and their formation, solar systems, extra-solar planets, near-earth objects (asteroids, comets, meteors), current space missions and findings.

Instructor: **Sean McCorkle, Ph.D.**, teaches astronomy at Suffolk County Community College and works at Brookhaven National Laboratory as a bioinformaticist.

Session 5, Galaxies & Deep Space Objects

February 23rd 2008

An illustrated lecture on the characteristics of different types of galaxies, black holes, star clusters, nebulae, magnetars, pulsars, and more.

Instructor: **Helio Takai, Ph.D.**, is an experimental physicist at SUNY Stony Brook, Dept. of Physics and Astronomy, and at Brookhaven National Lab. He is also a member of Custer's Research Cmte.

Session 6, Stargazing For Beginners

March 1st 2008

Learn what's up in the night sky and how to find it by star-hopping, the use of planispheres, and other resources. Weather-permitting, part of the session will be spent outdoors for a live demonstration.

Instructor: **Urszula Golebiewska, Ph.D.**, is an experimental biophysicist at SUNY Stony Brook, is on Custer's Observatory & Research Committee, and serves the Board as Assistant to the Secretary.

IN-SERVICE CREDIT

Letters will be provided to registrants upon request. If your district awards one credit for every 15 hours of instruction, one-tenth of a credit may be received for each session or three-fifths of a credit for the entire class.

For further information contact Donna McCormick: CusterDonna@yahoo.com or call 631-765-2626.

Registration For The Winter 2008 "Intro To Astro" Class

Please consider becoming a member of the Custer Institute, a 501(c)(3) NYS educational nonprofit. Custer is staffed by volunteers, and relies on dues, proceeds from events, and the generosity of the community for its survival. Your membership will not only help it continue to provide educational, cultural, and research programs, but will support efforts to improve the facilities and expand services.

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Full-time Students w/ID: __ The full class at \$25, or the following sessions at \$5 each: __ 1/26, __ 2/2, __ 2/9, __ 2/16, __ 2/23, __ 3/1

__ I have made payment via Paypal (to the account of CusterPaypal@yahoo.com) or __ enclosed my check/money order (payable to Custer Inst.) for \$ _____.

Please mail your form to:
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Please note: Confirmation of registration and notices about rescheduling due to weather, etc., **will only be sent by email.**

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