

The Custer Comment

★ *For The Curious* ★

October 2006

Volume XXXVI, Issue 10

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Waxing Harvest Moon



Image, courtesy Tom Madigan

In this image captured by the editor from his Patchogue home, the waxing crescent moon can be seen illuminating the tops of some foreground clouds, on its way to becoming the Harvest Moon. This was the name given to the October full moon by generations of farmers and agrarian societies who used the brilliance of the full moon in October to aid them in the late fall harvest. Also noticeable in this image, is the apparent low altitude of the moon as it traces out its easterly path along the plane of the ecliptic, the low path a certain sign that fall is upon us with the Winter solstice not far behind.

Highlights for October 2006

- Dr Ken Lanzetta at Stony Brook, October 6th; Stony Brook Lectures for October inside;
- John Dobson at Custer, October 7th; see inside;
- Custer Annual Astronomy Jamboree, October 20th and 21st; see inside
- Suffolk Community College Earth & Space Sciences Autumn Lecture Series for 2006; see inside.

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Editor's Column

<p>Tom Madigan, Editor Tom Madigan 99 North Summit Ave. Patchogue, NY 11772-2226 tmadigan@optonline.net tom@tommadigan.net (631) 714-4388</p> <p>Cutoff for submissions is the 15th of the month preceding publication</p> <p>Visit the new Custer Website at http://www.custerobservatory.org Custer Comment Archive: http://www.tommadigan.net/custer</p>	<p>The Custer Comment is published monthly by</p> <p>Custer Institute P.O. Box 1204 Main Bayview Road Southold, NY 11971 (631) 765-2626</p> <p><i>"I have loved the stars too fondly to be fearful of the night."</i></p> <p>Sarah Williams</p>
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Orion can be seen ascending the southeastern sky as we approach midnight at this time of year. With the Summer Triangle of Altair, Vega and Deneb placed high in the west at sunset, it's a sure thing that fall is upon us and that winter will soon be here, bringing with it the cold, crisp nights so often associated with the clearest and best observing conditions.

October is a busy month here at Custer and, as such, this issue is chocked full. Once again, Custer will host John Dobson (Saturday night, October 7th) and our annual Jamboree will be held during the weekend of October 21st (please see inside for all the details and refer to the separate mailing). Aside from all that, there are many other exciting events and developments to report on, including some exciting programs at the local institutions of higher education (SUNY, Stony Brook and Suffolk County Community College).

Best,
Tom

Tom Madigan, Editor

"To the youngsters of today, *I say believe in the future*, the world is getting better; there still is plenty of opportunity. Why, would you believe it, when I was a kid I thought it was already too late for me to make good at anything."

Walt Disney

AstroBytes

By Tom Madigan

For those of you who remember when I first started this column a while ago (September 2005 - <http://www.tommadigan.net/custer/custercomment-september2005.pdf>), you'll remember that one of the first applications I wrote about was Berkeley's Open Infrastructure for Network Computing (BOINC - <http://boinc.berkeley.edu>). In short, BOINC is an application that manages a growing list of "project programs" (eg: seti@home, Einstein@home, etc) and runs in the background, taking advantage of idle computer time. This would be the time you get up to get a fresh cup of coffee, walk the dog or switch applications from the document you've been working on to that image you've been trying to enhance with your favorite image editor.

As the power of the personal computer grows, so does the level of complexity that is possible for the project programs, opening up a whole new world of possibilities. Since I published my first article on BOINC, a number of additional projects have been added, some of which are of a particular personal interest. One that I just added to my BOINC project manager is the ***BBC Climate Change Experiment*** (<http://bbc.cpdn.org>). With a clear change in our climate manifest in all quadrants of the planet and with the overwhelming scientific consensus that human activity has contributed substantially, if not exclusively, to those changes, this project was a clear choice for me to include in the BOINC project list on my PC. A list of all projects currently available for BOINC can be found at: <http://boinc.berkeley.edu/projects.php>.

Welcome To Our New Or Returning Members

A warm welcome is extended to Diana and Peter O'Neill and family, Bob and Judy Ghosio and family and Bill Madden.

Welcome one and all!

Gift Corner & Classifieds

We Have Meteorites!

Great sets mounted in beautiful display cases. Perfect for gifts.

Custer coffee mugs, only \$4.
Do you have yours yet?

Custer Dome Assembly and Raising DVD

\$15.00

2 Payment

Options:

1) Mail a check or money order, payable to Custer Institute, to this editor's address with a note indicating how many copies you would like; 2) 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, \$15.00, \$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.

Heavenly Events To Watch For, October 2006

“ I could be worse employed
Than as watcher of the void,
Whose part should be to tell
What star if any fell.

Suppose some seed-pearl sun
Should be the only one;
Yet still I must report
Some cluster one star short. “

- Robert Frost

Those terrestrial-type neighbors of ours are still in hiding in October. All would be lost, except that extra help is provided during the last half of the month which offers us a chance to glimpse MERCURY; (see below.) MARS passes the solar farside on the 23rd and VENUS does so on the 27th, so our chances of finding either are approximately nil. JUPITER, which is very low over the southwest horizon at nightfall as October begins, slides into the evening glow during the month until it sets in bright twilight about ½ hour after sunset at month’s end. And, during the latter half of October, binoculars might reveal MERCURY within 5° beneath Jupiter over an unobstructed horizon. SATURN, in western Leo, rises around 2 AM at midmonth, and is 7° above the bright star Regulus, well up in the east at daybreak. As October begins URANUS is less than ½° southeast of the 4th magnitude star λ (Lambda) Aquarii, and during the month it drifts slowly southwestward, still

within 1° of Lambda. And NEPTUNE can still be found about 1½° northwest of the 4th magnitude star ι (Iota) Capricorni fairly low in the south soon after dark.

- 6 Full Harvest Moon tonight. The Moon was at perigee (its closest approach) earlier today. The combined effect of phase and closeness could cause extreme tides and coastal flooding in the event of a storm.
- 9 Tonight’s observing activities needn’t stop with moonrise tonight. Take note that the bright waning gibbous Moon rises in the northeast with M45, the Pleiades Cluster beneath it, and they’re closing ranks. The Moon is about to swallow 6 of the Pleiades’ brightest stars. Their disappearances along the Moon’s bright limb (DB) won’t be easy to witness without good telescopic power. Their reappearances along the Moon’s narrow dark limb (RD) will be much easier and more interesting to watch. Here are my estimated timings for these events as seen from western Long Island:

Star	name	mag.	(DB)	(RD)
17 Tauri	Electra	3.8	11:57 PM	1:07 AM
16 Tauri	Celaeno	5.4	12:09 AM	1:14 AM
20 Tauri	Maia	4.0	12:39 AM	1:47 AM
19 Tauri	Taygeta	4.4	12:43 AM	1:23 AM
22 Tauri	(“twin” of 21)	6.4	1:04 AM	1:58 AM
21 Tauri	Sterope	5.6	1:07 AM	1:48 AM

These time estimates could be off by several minutes, depending on the location of the observer and the sobriety of the estimator. Around 1:45 AM Alcyone, Eta Tauri, the brightest Pleiad, will squeeze by the Moon’s bottom edge.

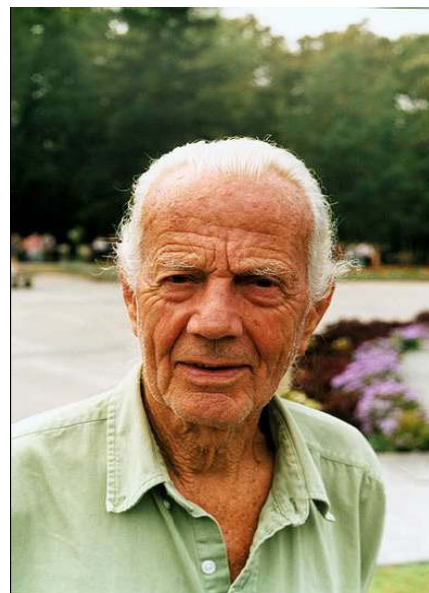
- 10 Henry Cavendish, who refined the measurement of the density (hence, the mass) of the Earth, and also “discovered” hydrogen, was born 275 years ago today.
- 21 In the predawn hours this morning and tomorrow morning the Orionid meteors, products of Halley’s Comet, will hurry away from the club of Orion, undimmed by moonlight. (Edmund Halley was born on October 29, 1656, 350 years ago.)
- 24 Half an hour after sunset the thin crescent Moon shares the southwest horizon with Jupiter and Mercury.
- 28 Turn clocks back an hour tonight; daylight saving is spent for this year.
- 29 Retrograde ends for Neptune, and it will now resume (as seen from here) its prograde drift eastward.
- Nov. 8 Prepare for the coming transit of Mercury!

Prepared by Robert Chapin

Editor: This month’s column completes 28 years of continuous publication of Heavenly Events by Bob

An Evening With John Dobson

Once again, Custer Institute is honored to host John Dobson (<http://www.johndobson.org>), a world renowned amateur astronomer and one who is widely credited with popularizing Astronomy with his impromptu lectures, complete with telescope, on the sidewalks of San Francisco. He is a genuine living legend, having revolutionized astronomy with his invention of the "Dobsonian" telescope mount, inspiring countless individuals around the world to look up and appreciate the universe around them. He was born in China into a family of educators (his grandfather founded Peking University), obtained a degree in chemistry from University of California at Berkeley, and later became a Vedantic monk, attempting to reconcile science and religion. While at the monastery, he honed his skills as a telescope maker and launched the Sidewalk Astronomers movement.



Here in the U.S., many consider him to be the Father of Amateur Astronomy. He has authored several books, including *Beyond Space and Time*, and is the subject of the acclaimed film, "A Sidewalk Astronomer." Please join us on this special occasion when John will, once again, speak to us about cosmology, his life and his work with the clarity, wisdom and wit that are his hallmark and the personal qualities that have set him apart as a truly exceptional individual.

As always, refreshments and observing will follow the talk. Seating is limited, so send in your registration or contact CusterDonna@yahoo.com today.

When: Saturday, October 7th, 2006, 8:00 PM;
Where: Custer Institute, Main Bayview Road, Southold, NY

Please Print Send this form to the Custer Institute at the address above. Questions? Contact CusterDonna@yahoo.com

Name _____ E mail Address _____
Address _____
City _____ State _____ Zip _____
Phone _____

Please reserve _____ tickets at \$12 per ticket for Members or \$15 for Non-Members. Confirmation **will only be sent via email.**

_____ I would like to join Custer as an ___ Individual (\$45), ___ Family (\$60), ___ Senior/Student (\$25), ___ Sponsor (\$100/yr)

_____ I am a Custer Member but would like to pay my dues in the amount of \$ _____.

_____ I would like to make a tax-deductible donation to Custer Institute in the amount of \$ _____.

_____ Enclosed is my check or ___ I have made payment via www.Paypal.com to the account of CusterPaypal@yahoo.com

Total \$ _____.

Custer Institute is an educational institution as defined by IRS Code section 501(c)(3) and is a Not-For-Profit Corporation in New York State that is reliant on public support.

Astronomy Jamboree 2006!

28th Annual Astronomy Jamboree And Conference

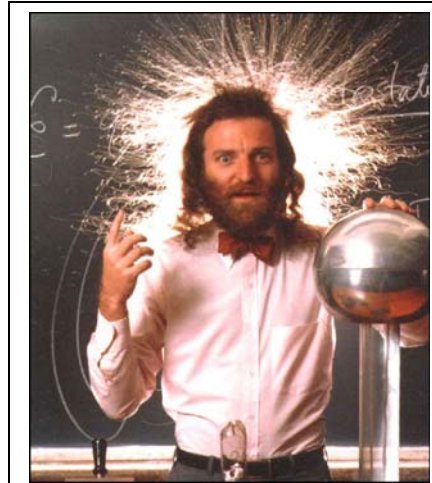
Friday, October 20 and Saturday, October 21, 2006

Friday At Custer Observatory

- 6:00 PM **Registration;**
- 7:30 PM **Concert featuring Dreamer (classic rock);**
- 9:00 PM **The Universe in Verse:** Poetry with Bob & Steve Chapin;

Saturday At Southold High School
(South off Rte. 25 onto Oaklawn Avenue, east of Main Bayview Road/Custer)

- 09:30 AM Registration (see p. 3 for pre-registration form)
- 10:00 AM **Portable Planetarium Shows** by David Cohn (gym)
- 11:00 AM " **Shadow Across the Sun: 2006 Total Solar Eclipse**" by George Lomaga (classroom)
- Noon **Lunch Break;**
- 1:45 PM "**Dark Energy, Dark Matter**" by Dr. Kenneth Lanzetta;
- 3:00 PM "**On the Trail of Sungrazing Comets**" by Tony Hoffman;
- 4:15 PM "**The Hybrid Image: A New Philosophy of Aesthetic Astroimaging**"; by Robert Gendler, MD; sale & signing of his new book to follow;
- 6:00 PM **Dinner Break;**
- 8:00 PM **Keynote Address: "Intelligent Life in the Universe?"** by David Helfand, PhD;
- 9:30 PM **Raffle Drawing**



Dr. David Helfand, Keynote Speaker

Guests and Speakers

Dr. David Helfand, Keynote Speaker

David Cohn, Director, Tupper Planetarium in Centereach;

Robert Gendler, MD, renown astrophotographer; his new book, *A Year in the Life of the Universe*, will be available for sale & signing;

David Helfand, PhD, Chairman of the Astronomy Dept., Columbia University; astrophysicist and guest on Comedy Central's "Daily Show";

Tony Hoffman, Staff Editor, *PC Magazine*; noted comet and asteroid hunter/discoverer; a Director of the AAA of NY;

Kenneth Lanzetta, PhD, observational astrophysicist and professor, Dept. of Physics and Astronomy, SUNY Stony Brook;

George Lomaga, retired astronomy instructor, Suffolk County Community College;

Keynote Address: "Intelligent Life In The Universe?"

In the last ten years, 200 new solar systems have been discovered within our local galactic neighborhood. Observations of newly forming stars suggest more than half spawn planets. Coupled with discoveries in biology and artificial intelligence, we can estimate the number of intelligent civilizations in the Milky Way. This illustrated lecture will discuss these issues, the estimates achieved, and explore the question of whether or not we still qualify as intelligent life in the cosmic sense. Dr. David Helfand is Chair of the Astronomy Dept. at Columbia University, was a Sackler Distinguished Visiting Astronomer at Cambridge University, received the 2002 Great Teacher Award from the Society of Columbia Graduates and the 2001 Presidential Teaching Award. His work as an astrophysicist has ranged from radio, optical and x-ray observations of celestial sources from nearby stars to distant quasars; he is currently involved in a project to survey the galaxy to obtain a complete picture of the birth and death of stars in the Milky Way. He appeared on the Discovery Channel's "Science News" to provide weekly updates on astronomical discoveries. His recent television appearances have been limited to more serious matters on Comedy Central's "The Daily Show." He says he serves on far too many university, government, and American Astronomical Society committees for his own (or anyone else's) good, and he believes he is a better cook than astronomer (most colleagues he's had over to dinner agree).

"Dark Energy, Dark Matter."

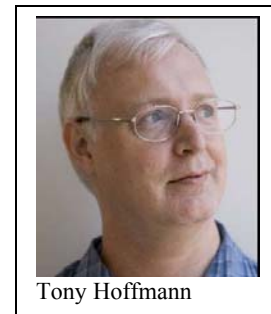
Recent research has demonstrated that the expansion of the Universe is accelerating. This requires that 70% of the Universe must be composed of a mysterious form of energy that cosmologists have dubbed "dark energy." These observations also demonstrate that most of the remaining 30% of the Universe is a mysterious form of matter, dubbed "dark matter." The result: cosmologists are now faced with the interesting situation that 95% of what makes up the Universe is unknown. This illustrated lecture will shed light on the nature of dark energy and dark matter, as well as address the implications. Dr. Kenneth Lanzetta is a Professor in the Dept. of Physics and Astronomy at the state university of New York at Stony Brook. He is an observational astrophysicist with special interests in cosmology. His original research on the formation and evolution of galaxies has led to very significant (and some say controversial) findings about the early Universe.



Dr Kenneth Lanzetta

"On The Trail Of Sungrazing Comets."

Several times over the past millennium, brilliant comets have been visible in daylight, even when very near the Sun. More than 1000 of these "sungrazing" comets have been found (mostly by amateurs) in images from the Solar and Heliospheric Observatory (SOHO). This illustrated lecture will discuss the impact of these discoveries, the nature of sungrazing comets, and how anyone may discover them in SOHO images or participate in several other astronomical discovery projects. Tony Hoffman is a Director of the Amateur Astronomers



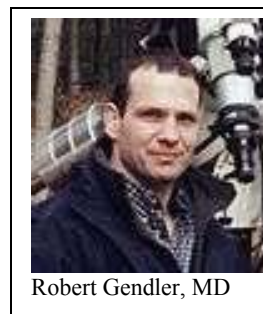
Tony Hoffmann

Association of New York and a Staff Editor at *PC Magazine*. In June 2006, his *Sky and Telescope* article (co-authored with Dr. Brian Marsden), "The Booming Science of Sungrazing Comets," won an award from the American Astronomical Society's Solar Physics Division. As a volunteer reviewer for the Spacewatch FMO Project, Tony has personally found 75 comets and one near-Earth asteroid (2005 JB22). He recently has had an asteroid named after him: **112900 Tonyhoffman**.

Editor: Please see the August 2006 issue of the Custer Comment for a full-featured, front page article about Tony Hoffman and the asteroid that bears his name.

"The Hybrid Image: A New Philosophy Of Aesthetic Astroimaging."

CCD or astroimaging is one of the most popular avocations of amateur astronomers today. In addition to their educational value, such images are of artistic merit. This illustrated lecture will provide an introduction to aesthetic astroimaging. Coverage will include a brief discussion of the history of this field, as well as of the evolution of the imaging philosophy and various ambitious projects of one of astroimaging's most renown figures. Dr. Robert Gendler is a physician whose astroimages have inspired countless individuals to take up the camera; his images appear everywhere and regularly in *Sky and Telescope*. After the lecture, Dr. Gendler will autograph copies of his newly released book, *A Year in the Life of the Universe* (available for purchase at the conference).



Robert Gendler, MD

Portable Planetarium Shows

A planetarium show is a great way to quickly become familiar with the night sky and to feel like you can reach out and touch the stars while listening to their stories. David Cohn, Director of the Tupper Planetarium in Centereach and member of Custer's Observatory Committee, will introduce you to the constellations and other celestial objects using a portable, E-Planetarium.



David Cohn

Dinner At The Soundview Restaurant

When: Saturday, October 21st; 6:15 – 7:45 PM

Contact Information

Internet: <http://www.SoundViewRestaurant.com>

Phone: (631) 477-0666

Special arrangements have been made with the Soundview for a three course meal at a cost of \$25 (non-refundable) for those attending the Jamboree. Select your dinner preference on the pre-registration form. When you arrive at the Jamboree, you will be given a dinner voucher specifying your entrée selection. Seating is limited, so please make your reservation by sending in your pre-registration form as soon as possible. The Soundview is located on County Road 48 (Sound Avenue) in Greenport, just minutes away from Custer and Southold High School. The restaurant overlooks Long Island Sound and is considered one of the North Fork's finest.

Entree Selections

- Grilled Salmon with a mustard dill sauce;
- Chef's Special London Broil;
- Chicken Franchise, chicken breast lightly floured and sautéed in lemon & butter;
- Vegetarian Pasta, Chef's selection of pasta with fresh vegetables;

Dinner begins with a crisp autumn salad topped with a delicious house dressing and ends with ice cream crepes served with assorted berries and whipped cream, coffee, decaf or tea. A cash bar will be available. Chef reserves the right to make menu substitutions.

Local Hotels Providing Discount Rates to Jamboree Registrants

- Silver Sands Motel; <http://www.silversands-motel.com>; (631) 477-0011;
- Drossos Motel; <http://www.drossosmotel.com> (631) 477-1334;
- SoundView Inn; <http://www.soundviewinn.com> (631) 477-1910

For information about other hotels, restaurants and area attractions, please visit:
<http://www.NorthFork.org>.

We would like to thank the following Sponsors for their contributions to our raffle, for their generous donations and for the discounts of their products and services:

Astrotec Telescope Suppliers <http://www.Astrotecs.com>, (631) 563-9009;
Berger Brothers <http://www.BergerBrothers.com>, (631) 264-4160;
Camera Concepts <http://www.CameraConcepts.com>, (631) 475-1118;
North Fork Potato Chips <http://www.NorthForkChips.com>, (631) 734-2243;
Cross Sound Ferry <http://www.LongIslandFerry.com>, (631) 323-2525;
The Rotisserie <http://www.RotisserieofSouthold.com>, (631) 765-9655;
Soundview Restaurant <http://www.SoundViewRestaurant.com>, (631) 477-0666;
Greenporter Hotel-Bistro <http://www.TheGreenporter.com>, (631) 477-0066;
North Fork Chamber of Commerce <http://www.NorthForkChamber.com>;
Staples <http://www.Staples.com>, 1-800-3Staples;
WUSB.FM, Stony Brook Radio <http://www.WUSB.fm>, 90.1 FM;
Long Island Radio Broadcasting <http://www.WBAZ.com>, 102.5 FM;
WBAI:FM-Pacifica Radio <http://www.WBAI.org>, 99.5 FM;
The SoundView Inn, Silver Sands and Drossos Motels (see above);

We also would like to extend our deepest appreciation to all the presenters, performers and behind-the-scenes volunteers who made this conference possible.

Please print the following form and send it to:

Donna McCormick

C/o Custer Institute

1115 Main Bayview Road

P O Box 1204

Southold, New York 11971

Any questions, please contact Donna at CusterDonna@yahoo.com.

Custer Institute 28th Annual Astronomy Jamboree Registration Form

Name: _____
E mail Address: _____
Address _____
City _____ State _____ Zip _____
Phone _____

All tickets **\$5 higher at the door**. Registration confirmation *only provided via email*.

Please reserve _____ tickets at \$35 per ticket for Members, \$45 for Non-Members, \$25 Seniors/Students, \$5 Children under 13

_____ I would like to join Custer as an ___ Individual (\$45), ___ Family (\$60), ___ Senior/Student (\$25), ___ Sponsor (\$100/yr);

_____ Please reserve ___ dinners at \$25 each (non-refundable) at the SoundView Restaurant on October 21st. See previous page for menu details;
Specify number: ___ Chicken; ___ Fish; ___ Beef; ___ Vegetarian Pasta;

_____ I am a Custer Member but would like to pay my dues in the amount of \$_____.

_____ I would like to make a tax-deductible donation to Custer Institute in the amount of \$_____.

_____ Enclosed is my check or _____ I have made payment via <http://www.Paypal.com> to the account of CusterPaypal@yahoo.com.

TOTAL \$ _____

Note: please check Custer's website at <http://www.custerobservatory.org> for any last minute changes or additions. With the exception of the restaurant prices, the above listed prices are suggestions; if they are beyond your budget, please contact us. Custer will never turn away a curious mind.

As always, refreshments and observing are ongoing throughout the evening, weather permitting.

Custer Institute is an educational institution as defined by IRS Code section 501(c)(3) and is a Not-For-Profit Corporation in New York State that is reliant on public support.

Stony Brook October Lecture Series

Astronomy Open Night: The New Age of Precision Cosmology

When: Friday, October 6, 2006
Instructor: Kenneth Lanzetta, PhD

Since Hubble's discovery of the expansion of the Universe in the 1930's, cosmologists worldwide have sought to measure the parameters that describe our cosmological world model. But these are difficult measurements to make, and until very recently, even the most fundamental cosmological parameters - like the rate of the expansion and the age of the Universe - have been uncertain by factors of two.

Over the past several years, a variety of new measurements by ground- and space-based astronomical telescopes have pinned down the cosmological parameters to unprecedented precision, ushering in what some have called a "new age of precision cosmology". With these new measurements in hand, cosmologists have been emboldened to push beyond the standard questions of cosmology and to ask new questions that address the formation of structure in our Universe.

In the next of the popular series Astronomy Open Night, Prof. Ken Lanzetta will describe the new measurements of the age of precision cosmology and will discuss how these measurements have affected our thinking about the nature of the Universe.

Dr. Lanzetta has been a faculty member at Stony Brook since 1993 and lives in Smithtown. He is an observational astrophysicist with special interests in cosmology and formation and evolution of galaxies. Following the lecture, weather permitting, there will be a viewing session with the University's telescopes.

Physics Open Night: The Worlds of Physics

When: Friday, October 13, 2006
Instructor: Prof. Martin Rocek

"What is String Theory and Why is it Interesting?"

Before addressing the question in the title, I will describe a cartoon development of physics, starting from Sumerian clay tablets, going through Newton's and Einstein's theories of gravity, Quantum Mechanics, Quantum Field Theory and finally leading up to String Theory. I will try to describe what problems it is trying to solve, to what extent it has succeeded, and what its weaknesses are.

Biology Open Night: The Living World

When: Friday, October 20, 2006
Instructor: Dr. Ned Seeman

"DNA: Not Merely the Secret of Life"

Dr. Seeman will show you his pioneering work in developing ways to construct three-dimensional objects from synthetic DNA molecules, including cubes and more complex polyhedra. Natural DNA is a linear strand from which scientists had not previously been able to create complex structures. "But in terms of material science," Seeman says, "they allow us to make something that is not just a long piece of spaghetti; they in fact allow us to make molecules that have specific branches, relatively close together on the scale of the stiffness of the molecule." Such "smart materials" are expected to lead to the construction of biochip computers and nanoscale robots in which DNA would direct the association of molecules in a way that transmits information.

Seeman was born in Chicago and received his Ph.D. in biological crystallography from the University of Pittsburgh. His postdoctoral training, at Columbia and MIT, emphasized nucleic acid crystallography. He was inspired at a pub and realized that the similarity between 6-arm DNA branches junctions and flying fish in the periodic array of Escher's 'Depth' might lead to a rational approach to the organization of matter on the nanometer scale, particularly crystallization. Ever since, he has been trying to implement this approach and its spin-offs, such as nanorobotics and the organization of nanoelectronics. Since 1988 he has worked at New York University. He has won the Sidhu Award, the Feynman Prize, the Emerging Technologies Award and the Tulip Award in DNA Computing.

Geology Open Night

When: Friday, October 27, 2006
Instructor: Prof. Scott McLennan

"A Thousand and One Nights on the Surface of Mars"

On the evening of this presentation, the Mars Exploration Rover "Spirit" will have just surpassed one thousand Martian days (sols) of operation in Gusev crater. The Rover "Opportunity", approaching sol 1000, continues to explore Meridiani Planum on the opposite side of the planet. The rovers have survived more than ten times their primary missions of 90 sols each. Although they are beginning to show signs of old age, both Rovers still retain mobility, are able to make use of their entire scientific instrument suites, and continue to return an unprecedented amount of data from the Martian surface.

Power-starved "Spirit" has spent the past 200 sols in a stationary "winter haven" position on Low Ridge in the Columbia Hills. From this location it has obtained a remarkably detailed set of scientific observations of its immediate surroundings. For two years since leaving Endurance crater, "Opportunity" has been driving steadily southward, on its way to the 800 m diameter Victoria crater. Along the traverse it has stopped at several small craters and outcrops to continue its investigations of evidence for flowing water on the ancient surface of Mars.

In this presentation, Prof. McLennan will review scientific accomplishments of the Mars Exploration Rovers and discuss the plans for exploration during the coming martian summer.

Note: Unless otherwise specified, all lectures begin at 7:30 PM, sharp and are conducted in the ESS Building, room 001 (main lecture hall, ground floor).

Suffolk County Community College Earth & Space Sciences Autumn Lecture Series 2006

Global Warming or Natural Cycle?

Instructor: Professor Sean Tvelia
When: Monday, October 9, 2006;

Over the past 4.5 billion years of Earth's history the environment has varied from a frigid ice house to a tropical paradise many times, we may even be experiencing a period of warming right now.

However, recent advances in geology can now shed some light on these events.

In this lecture, professor of Geology, Sean Tvelia, will discuss possible causes of these temperature cycles, the effect they have had on life on Earth, and the intriguing possibility that they may be responsible for global warming.

The Eye of the Beholder A Journey Through the Multi-Wavelength Universe

Instructor: Professor Matthew Pappas
When: November 6;

The human eye has provided us with astonishing views of the universe. But even after the most sophisticated optical telescope extended our gaze into the depths of space, the vast majority of the cosmos was still hidden from view. The fundamental nature of the universe became revealed once astronomers began to look for other forms of radiation.

Professor of Astronomy, Matthew Pappas, will detail the different technologies employed by modern day astronomers to study the heavens, as well as the stunning results they have yielded.

The Mystery at the Heart of the Galaxy

Instructor: Michael Inglis, PhD
When: December 4;

On an autumn evening, look towards the constellation Sagittarius, because, in that direction lies the center of the Milky Way Galaxy. Yet, we have never seen it in visible light as it is forever hidden from our gaze by vast interstellar dust and gas clouds. But recently, using X-ray, radio, and infra-red telescopes something strange has been found.

Professor of Astronomy, Dr. Mike Inglis, will describe how we have been able to peer through the veil and see the strange object lurking at the exact center of our galaxy, around which the galaxy, the stars and us, revolve and that will eventually devour us, the stars and the Milky Way!

Lectures are at the Ammerman Campus, Smithtown Science Building, room T109, and start promptly at 7.30 p.m. After the lecture, weather permitting, we will make use of the department's telescopes. If you wish to attend the SCCC lectures but do not know where the Ammerman (Selden) Campus is, please notify this editor via email or phone and I will be happy to send you instructions.

News and Noteworthy

Custer On PBS

This year, Emmy Award winning filmmaker, Brent Sterling (www.SterlingFilms.com) has turned his eye to the North Fork and produced the series: "The Souls of New York: The North Fork." Four or five individuals are interviewed in each episode, providing us with a glimpse of the people, businesses and attractions that make their marks on this great community. In July, Brent visited Custer and interviewed Board Member and Observatory Director, Jeffrey Owen Katz, Ph.D. The astrophotos of Custer's own Steve Orlando also appear in that episode, which will air later this Fall (keep an eye on the Comment and website for date and time). Meanwhile, you can learn about Custer's neighbors by watching the other episodes every Wednesday evening at 8:30 P.M. on Channel 21.

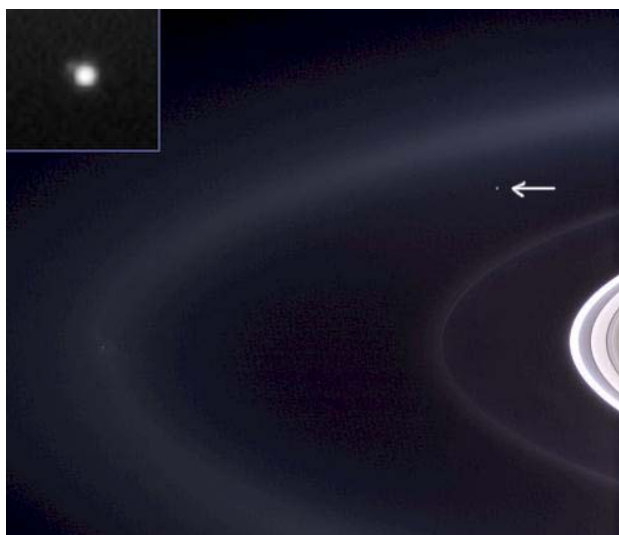
The "Pale Blue Dot" – As Seen from Saturn!

Once again, humankind is privy to a view of their tiny, fragile world seen from afar, this time at almost 1.5 billion kilometers! The view, as seen by the Cassini orbiter through a newly discovered ring of Saturn, shows the earth as a "pale blue dot", a correct characterization and a term made famous by the late Carl Sagan in his reference to the earth as seen one last time by the outbound Voyager 1 spacecraft as it began its interstellar journey in 1990. For additional details and images, navigate to <http://saturn.jpl.nasa.gov/multimedia/images/image-details.cfm?imageID=2279> , <http://ciclops.org/view.php?id=2235> and http://ciclops.org/view_event.php?id=55. SUNY, Stony Brook Alumna and native New Yorker, Carolyn Porco, PhD, is the Cassini Imaging Team Leader at CICLOPS.



Earth, as seen by the outbound Voyager 1 spacecraft in 1990. The tiny dot, lost in a sunbeam, can be seen in the nearly-vertical solar ray, almost in its center and about halfway up. At the distance Voyager was from the sun, the Earth was almost lost in the glare of the sun. The image of the earth is .12 pixels in size.

For more information about the Cassini-Huygens mission visit <http://saturn.jpl.nasa.gov>. The Cassini imaging team homepage is at <http://ciclops.org>.



Earth, with an appendage at the 10:00 position (most likely the moon), as seen by the Cassini orbiter. This spectacular image was acquired by Cassini's wide-angle camera. This image was made possible by the passing of Saturn directly in front of the Sun from Cassini's point of view.

All images associated with this story are courtesy of NASA, JPL and CICLOPS

Brookhaven Township Poised to Enact Lighting Ordinance

At the Tuesday, September 19th public hearing, held at Brookhaven Town Hall, Brookhaven Supervisor Brian X. Foley and all council members entertained comments, suggestions, objections and recommendations from the public on all items so open for public discussion at the time. The first item on the agenda was the proposed Lighting Ordinance under consideration by the Township. Supervisor Foley and the assembled council members heard from 5 individuals concerning the proposed lighting ordinance:

1. Susan Harder of East Hampton; Susan spoke as eloquently as always, providing a compelling and informative PowerPoint presentation;
2. This editor spoke in support of the measure;
3. Dowling College Astronomy professor, 8-time author and Custer member Phil Harrington spoke in support of the measure. Phil is a credentialed engineer who earned a Masters Degree in Environmental Engineering with "*Design of an Energy Efficient Outdoor Nighttime Urban Lighting System*" as his Master's thesis;
4. Custer Board member and director of the Tupper Planetarium, David Cohn, spoke in support of the measure;
5. Alan Stadler spoke in support of the measure.

In addition to those who spoke in support of the measure, Jim LaCarrubba, the township's lighting commissioner, provided his qualified support, requesting that all language concerning streetlights be considered separately and that, taken in its totality, the initiative was "a welcome measure". Further underscoring the positive reception the measure received, one of the council members characterized it as the "number one quality of life issue facing the township".

The draft ordinance is undergoing final edits and slight revisions and passage by the town council is expected shortly. On behalf of Custer Institute, this editor would like to publicly thank the following for their support, expertise and assistance without which this important legislation for Brookhaven Township, the largest township in Suffolk County, would not have been brought to fruition:

1. Councilman Kevin McCarrick, the bill's sponsor, for his steadfast support of the measure in the face of substantial opposition;
2. John Kreutz, Councilman McCarrick's legislative aide;
3. Susan Harder for her tireless efforts to assist those in a neighboring township enact something that will benefit all of us.

NASA Poised to Approve Hubble Servicing Mission

According to MSNBC (<http://www.msnbc.msn.com/id/15062837>), NASA is poised to approve a final servicing mission to the Hubble Space Telescope: "NASA is expected to give the official go-ahead for the mission later this fall, with launch expected by early 2008." Cautious optimism was expressed by AOS member, Glenn Schneider, PhD, Associate Astronomer & NICMOS Project Instrument Scientist for the Hubble Space Telescope: "W.r.t. [ed: with respect to] ACS -- it is very unlikely (though I will not say impossible) that an ACS restoration to full redundant capability would be levered into SM-4. All the EVA time is fully subscribed. The mission is already chock full -- and ready to go as soon as Administrator Griffin gives a thumbs up. The "work too" date (fully depending upon shuttle availability of course) is Jan 2008 -- but I wouldn't bet the farm on that."

Editor: These are Glenn's personal comments and do not constitute any official pronouncement, guarantee or declaration.

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