



The Custer Comment

★ For The Curious ★

November 03

Volume XXXIII, Issue 11

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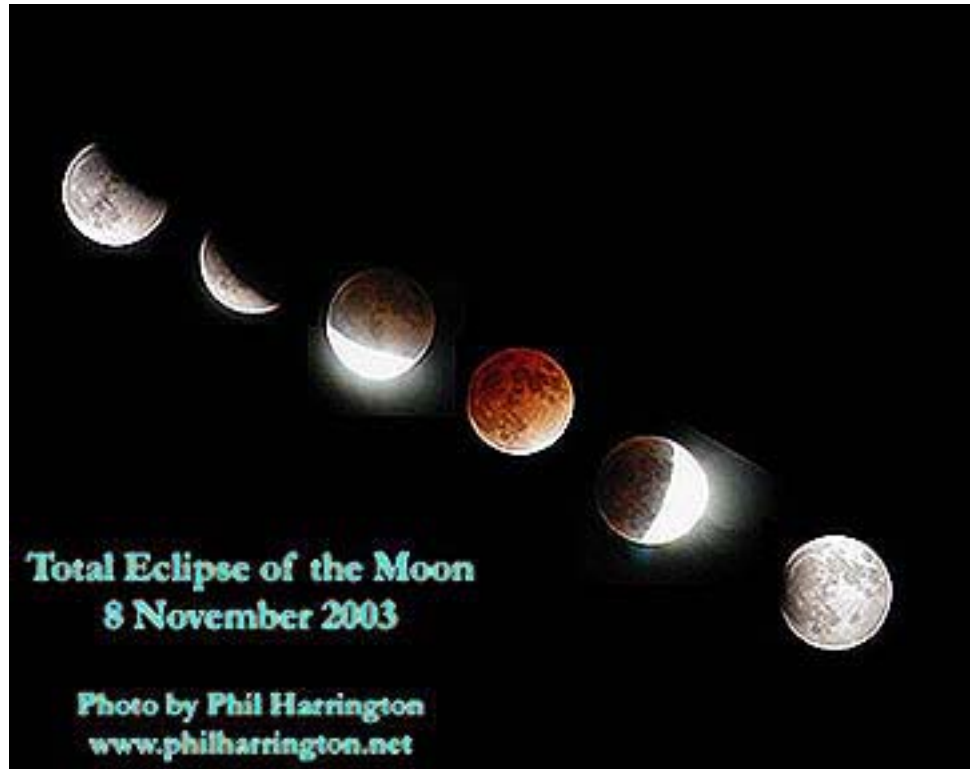
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“The Best Jamboree Ever” and November’s Spectacular Lunar Eclipse Highlight Autumn Events at Custer!



Lunar Eclipse montage, courtesy of Custer member Phil Harrington. Thanks, Phil!

A clear, cool and crisp November evening provided perfect conditions to observe this spectacular Lunar Eclipse. A large public turnout, complete with the full compliment of Custer staff and fully operational observatory combined to make this a truly memorable event, not only for Custer but for the public at large.

With over 160 registered attendees and distinguished professionals from the who’s who of Astronomy in attendance, our 25th Anniversary Jamboree was the best one to date.

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AOS Dome arrives at Custer



Photo, courtesy Jim Eagan; *Editor*: this picture shows the dome at the unloading point, not at it’s final resting place.

Editor's Column

<p>Tom Madigan, Editor Tom Madigan 99 North Summit Ave. Patchogue, NY 11772-2226 tmadigan@optonline.net 631-447-5339</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</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>
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My apologies for publishing this month's Custer Comment so late. With the Jamboree at the end of October, the lunar eclipse on November 8th, the breaking news concerning our new telescope and the arrival of the AOS dome, I waited to publish November's Comment so as to include all these events. *Mirror making students*, please note: starting in next month's Custer Comment, I'll be publishing a class schedule, to which I will strictly adhere. If you are unable to make it on the scheduled day, please give me at least 24 hours notice via email or telephone. Thanks.

Best,
 Tom
Tom Madigan, Editor

Gift Corner & Classifieds

<p>We have meteorites.</p> <p>Great sets mounted in beautiful display cases. Perfect for gifts.</p> <p>New Custer logo coffee cups ONLY \$4 EACH</p>	<p>The Gift Shop still has a dwindling number of copies of ASTRONOMY FOR ALL AGES, by Philip Harrington & Edward Pascuzzi just \$20. As an added bonus, copies are signed by Ed Pascuzzi. We also have copies of PARALLAX, the book that was referred to in the recent lecture. Quantities are limited so hurry and add to your collection while supplies last. Back by popular demand, we again have the <i>exclusive Custer Astronomical Pocket Diary</i> still just \$9. Quantities are limited.</p>	<p>For Sale Super C-8 Telescope, Richfield Finder, Tripod Wedge, Polaris Pointer, Polar Axis Finder, Case liner, Handle, Handbook-\$1307. No-tool knob set for C-8- \$12. Illuminated Reticle ocular assembly for C-8 including 12.5MM ocular rheostat-\$66. 2 inch Premium grade Deep Sky filter and 1 1/4 inch ocular adaptor-\$121. Observer's Chair with adjustable height-\$47. Rubber eyeguards (4)-12. Vernon mounted glass filters- neutral density, blue 80A, violet 47, light red-\$23A, green 58, orange- \$51. Adapter for Celestron 1 1/4 inch non-threaded oculars-\$10. Rich Field Adaptor with TeleCompressor and 20mm Erfle ocular-\$150. 8mm Brandon-\$69. 12mm Brandon-\$59. 2.4X Dakin Barlow- \$59. 25mm Kellner-\$28. 40mm Kelner-\$28. Declination Motor & Accutrack Telescope Drive Corrector, Dual Axis-\$199. Counter Weight set-\$30. Astronomer's Flashlight-\$7. Omni-axis Camera Mount-\$ 50. Accessory tray-\$30. Accessory Case-\$25. Helical Focuser-\$28. Dewcap-\$40. T-adaptor-\$20. Eyepiece projection adapter: teleextende-\$20. Best offer or \$1600 for the whole. Original cost \$2468. Contact Bill Richards at 631-957-2032, 98 Laurel Road, Lindenhurst, NY 11757-1705.</p>
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HEAVENLY EVENTS TO WATCH FOR November 03

“No night is so drab as a starless night, nor is any life more drab than that of one who has never known the thrill of starlight after storm, the comfort of it and the soothing assurance of stars once more in order.”

- Hal Borland

All month MERCURY hides in the glow of the evening twilight sky, but a thin crescent Moon may help you find it after sunset on the 24th. The following evening the Moon will set with VENUS along the southwest horizon. Venus is going to establish herself as reigning “evening star” thru late May. MARS charges eastward across Aquarius in November, fading from -1.2 to -0.4 magnitude. At midmonth Mars is due south around 7:30 PM and sets around 1 AM. Now among the stars in southern Leo,

JUPITER rises around 1 AM and is well up in the southeast by dawn. Now retrograding slowly westward in Gemini, SATURN rises around 8 PM and is due south around 3 AM at midmonth. Faint planets URANUS and NEPTUNE can still be found in Aquarius and Capricornus, respectively, in the southwest after dark.

- 3 The waxing crescent Moon accompanies Mars down the southwest sky this evening.
- 4 Some early South Taurid meteors may be seen in the early morning hours, especially after moonset (around 2 AM.) Next week’s North Taurid meteors will be dimmed by a bright waning gibbous Moon.
- 8 Retrograde ends for Uranus in Aquarius today.
- 8 This evening’s total eclipse of the full Beaver Moon is the event of the month! Here in the Northeast we get to see the whole thing. At 5:15 PM the left edge of the newly-risen Moon will reach the penumbral, or partial, shadow of the Earth, but nothing out of the ordinary will be noticed for awhile since the evening sky will still be pretty bright. At 6:32 it will reach the umbral, or full, shadow of the Earth and the partial phase of the eclipse will begin. Watch the umbral shadow envelop the Moon from the upper-left edge to the bottom edge until, at 8:06 PM, the Moon will be in total eclipse. (Note that the northern part of the Moon will be much darker than the southern part, because the Moon is well below the center of the Earth’s shadow.) Mid-eclipse is at 8:19 PM, and totality ends at 8:31, only 25 minutes after totality began. The Moon will then emerge from the umbral shadow until 10:05, when the shadow departs from the upper-right edge near Mare Crisium. At 11:22 PM the Moon will be clear of the Earth’s penumbral shadow as well and the eclipse will be over.
- 12 Around 5:18 AM this morning watch the 5.0 magnitude star 125 Tauri squeeze past the bottom edge of the waning gibbous Moon - an event called an appulse. Observers on Long Island’s North Fork may instead see a grazing occultation!
- 12 The waning gibbous Moon rises ahead of Saturn and leads it across the sky tonight.
- 17 The venerable Comet 2P Encke is closest to the Earth in its parabolic orbit, at a distance of about 24 million miles. Look for it near ϵ (Epsilon) Cygni, in the eastern wing of Cygnus the Swan. On the evening of the 22nd, look for Encke next to, or even in, the Coathanger Cluster of Vulpecula! Use binoculars. According to Ottewell, this visit by Encke will be one of its best in this century.
- 17 Last quarter Moon will interfere with this morning’s Leonid meteor display.
- 20 Algol, β Persei, is in mid-eclipse at 10:21 PM; also at 7:10 PM on the 23rd.
- 23 New Moon. Total solar eclipse across Antarctica. Moon is also at perigee, which may help cause extreme tides.
- 24 Look for a razor-thin crescent Moon very low in the west-southwest half an hour after sunset. Just above it is Mercury. Even if you don’t find either, you should be able to see Venus above them. Use binoculars.

Prepared by Robert Chapin

PRESIDENT'S MESSAGE

The 75th Custer Anniversary Celebration along with the 25th Annual Jamboree were both a big success. It was my honor to receive a celebratory plaque to Custer for its 75 years of service to the community. It was presented by Town Supervisor Josh Horton on behalf of The Town of Southold.

You have probably noticed the many newspaper articles recently concerning LIPA and Richard Kessel embracing cutoff lighting fixtures to help save our view of the night sky. This has been a real David and Goliath story. It was my pleasure, before the start of the Dr. Fred Hess Lecture, to award plaques to Susan Harder, who was unfortunately not in attendance, and Gary Citro in recognition of all there untiring work to preserve our night skies, which has led to LIPA agreeing to change 16,000 floodlights. Also honored was Gail Clyma of the SELENE organization who has been doing battle at the state level.

I do not want you to take my remarks as meaning that the battle has been won. Now we all have to write our Suffolk Legislators, State Representatives and Gov. Pataki to get Suffolk County and New York State to legislate Cut-Off Lighting so that it will not take another power outage to let us and our children view the wonders of the sky and to see the Milky Way again.

Sue Rose, the president of AOS, then pulled a gotch-ya by presenting me with a plaque, on behalf of all the area Astronomy Clubs, honoring Custer on the advent of its 75th Anniversary and for its years of inter-club cooperation. On behalf of the Institute, thank you!

The Dome Replacement Fund Raising continues to grow. George Lomaga and the Custer Astronomy Group produced a wonderful 75th Anniversary Journal which contains many pictures and a wonderful history of Custer. Copies are available for sale and proceeds will be added to the Dome Replacement Fund. Do you have friends who wonder what this Custer Institute you belong to is all about? Why not purchase a copy of the 75th Anniversary Journal and give it to them as a holiday gift. Then invite them to join you for a Saturday evenings viewing at Custer.

I still am looking for help. If anyone has experience in writing Grant Requests and would like to help the institute, please call me at 631-218-2350 ASAP.

Bob Vanson

WELCOME TO OUR NEW OR RETURNING MEMBERS:

Jeff & Penny Johns of N. Babylon; Susan & Robert King of Flushing; Robert & Betty Bushkirk of Oceanside and the return of our old members Joe Peselli of Fonda, NY and Phil and Wendy Harrington of Miller Place.

Welcome one and all!

Announcements & General Interest

Leonid Meteor Shower

Where: Suffolk County Community College
When: Saturday, November 15th, 7:30 PM
Amenities: Wine & Cheese;
Special attraction: 1st Light Remote Telescope Observation.

New Custer, Observatory-Class Telescope

Work on our new telescope to replace the legacy telescope in the dome has begun! This week, the order was placed with Stabilite (<http://www.stabilite.com>) for the 25" blank that will become the heart of our new Observatory-Class, 25" Classical Cassegrain. Stabilite was chosen because of their superior cellular design and use of Schott Borofloat 33, a low-expansion glass superior to Pyrex. The team to work on the telescope is being assembled now, so if you feel you could substantially contribute to the success of the project, please contact me at your earliest convenience.

Thank You!

Thanks to the volunteers who helped build the observer's platform for the CGE1400. The crew who arrived at 8 AM or shortly thereafter were Mitch Etter, Bob King, Kurt Massey and Rico Verticchio. Thanks also to all who contributed to the design and installation effort.

A.O.S. Dome Moved To Custer

Well it is done,

The dome was moved to Custer in two days, and in two parts.
The first day (Friday) the dome itself was removed from the structure.
All the credit for this operation first and foremost, goes to "Master Rigger" Robert G. Buskirk, my dad.

Saturday, the dome and the structure were loaded onto a truck, and transported to Custer.
Sounds simple right? Well, it wasn't. The second day (Saturday), we used 4x4's under the dome, and the structure, and with the trucks wench, and others pushing and pulling, we manage to get both, on the flatbed.

I have asked Karel Bott to join me in giving the first part of the presentation at the next meeting.
It is with great appreciation that I bring attention to Rich Harrison, the truck driver.

I wish to thank everyone who helped in this undertaking, it was cold, the days were long, and I kept forgetting the donuts and coffee. Thanks again Karel.

It is without further adieu, that I thank Hillary And Patrick DeCanio, this dome and structure was on their property when they moved in. Mr. DeCanio thought how awful he would feel if it went to waste, and was very happy to see it go, in the hands of those who will use it, and take care of it. They were both very nice, and deserve our genuine gratitude for their gift.

The list of People who have given their time and effort to the A.O.S. Dome move to Custer are:

Karel Bott, Bob Buskirk, Carol Caputo, Larry Dwyer, John Eaccarino, Rich Harrison, Rich Huber, Tom Lynch, Mark Potak, Dennis Wilde,

A.O.S.

Observatory Chairperson
Jeffrey "Bondo" Johns

Editor: Memo reproduced in part due to space limitations; see photo on TOC page.

Special Announcement and Request

Theft at AAA of NY

The Amateur Astronomers Association of NYC had a theft from its offices just prior to beginning an observing session for the lunar eclipse, November 8th. Among the many items taken were the following:

1. Celestron C-8 Ultima with carrying case and tripod. This includes 30mm Celestron eyepiece, 40mm Televue Plossl, Televue star diagonal;
2. 5" Celestron SCT with tripod and carrying case Celestron aluminum case;
3. Plossl set (4, 6, 9 & 15mm), 2X Barlow, filters, star diagonal;
4. GPS for the telescope;
5. 60 rechargeable nickel-cadmium 3A batteries;
6. 10X42 Swarovski binoculars (serial no. D673793092);
7. 14X100 binoculars;
8. Mavica 85 digital camera
9. 600mm f/8 solid catadioptric telescope
10. camera tripod
11. Kodak digital DC210 camera
12. 20mm University Optics eyepiece
13. 7mm orthoscopic eyepiece
14. 1.25" star diagonal
15. Burgess 20X80 binoculars
16. Burgess parallelogram binocular mount
17. Orion tripod with carrying case
18. Televue Pronto telescope
19. Carbon-fiber tripod
20. Bogen 410 head
21. 3-6 Televue zoom
22. 7mm Type 6 Nagler eyepiece
23. 12 mm Radian;
24. Brandon 32mm Widefield

If you see any of the items on this list, please contact any of the following people:

Bruce Kamiat (212)923-7021

Stew Rorer (212)929-4672, (212)243-4125

John Pazmino (718)252-0388, (212)273-5988

Tony Hoffman (212)460-1621, (718)821-0280

Alice Barner (212)879-1936

Rik Davis (212)807-9624, (917)853-1158

Mike O'Gara (212)861-2385

"AOS Hotline" <AmateurObserversSociety@yahoogroups.com>; "UACNJ" <UACNJ@yahoogroups.com>; "Bob Vanson" <bvanson@aol.com>; "Helen McEntire" <HelenMcEntire@excite.com>; "Astro Officers" <astro-officers@egroups.com>

Police at the 19th Precinct or at your local precinct

Thank you,

Bruce Kamiat,
Chair, AAA Observers Group

Custer's 2003 Annual Jamboree, a 25th Anniversary Celebration!

With over 160 registered attendees and distinguished professionals from the who's who of Astronomy in attendance, our 25th Anniversary Jamboree was the best one to date. Notable speakers such as Dr. Rich Terrile from NASA's Jet Propulsion Laboratory (JPL) and Dr. Edward Bowell from Kitt Peak National Observatory were among the distinguished speakers. Dr. Terrile discussed the latest advancements in imaging technology developed and used by NASA and JPL; Dr. Bowell provided a compelling discussion on near-Earth asteroids, the latest programs put in place to track them and the survivability of a collision between such an asteroid and the Earth. In addition to Drs. Bowell and Terrile, the Jamboree's highlights included the following:

1. Custer's Colin Van Tuyl, as grand prize winner of the jamboree's raffle, wins the 10" Dobsonian donated by Hardin Optical (<http://www.hardin-optical.com>);
2. Custer President Bob Vanson receives 25th Anniversary plaque from Susan Rose of the AOS;
3. Matt Dougherty of the Rose Center for Earth and Space Sciences (<http://www.amnh.org/rose>; formerly, The Hayden Planetarium), New York City, provided an insightful presentation on the Solar Analemma during the Saturday morning workshops;
4. Gail Clyma and Gary Citro of SELENE (<http://www.selene-ny.org>) as well as Custer's own Susan Harder receive plaque and recognition from Susan Rose of the AOS for their untiring work to restore and preserve the quality of the night sky;
5. The Fire Alarm! An impromptu interruption of Dr. Bowell's lecture was experienced on Saturday night by the inadvertent activation of Southold High School's fire alarm system. Kudos to the rapid response of Southold's Fire rescue and Southold's finest!



Photo, courtesy G. Lomaga; Custer President Bob Vanson receives 25th Anniversary plaque from Susan Rose.



Photo, courtesy G. Lomaga; Dr. Edward Bowell of Kitt Peak speaks Saturday night, October 25th.

The Universe, Past, Present and Future

A treatise by Thomas J. Madigan

Over the past 7 months, I've presented a lecture that I'd given to those in attendance at the Year 2000 Annual Custer Astronomy Jamboree. I hope you've enjoyed reading it as much as I had in presenting it. Although it is a personal fascination of mine, I believe that it goes to the very heart of what compels us to explore the Universe around us in all its grandeur and how it causes us to contemplate how we, too, are but a minute but grand part in all of it, *The Greatest Show of All Time*. The entire lecture can be found online at: <http://tmadigan.home.netcom.com/universe>.

The Dark Era,

Sixth and final installment in a multi-part series.

Nothing that coheres is left. The universe is devoid of almost everything it once contained: matter, protons, black holes, everything but electrons is gone. Discussion of events during this era is almost complete speculation modified by science to a minimal degree. Electrons drifting through the endless, black void may feel the effect of a positron and form a Positronium atom whose radius is the size of the current, observable Universe. This object, over vast eons of time will ultimately spiral in upon itself and be annihilated. Other low-level annihilation events will also take place.

At this point we can do no more science, only speculation about any points further along the time line. Physics, specifically Quantum Physics states that the Universe will never reach a totally quiescent state. Perhaps there are physical properties yet to be discovered or ever to be discovered that will affect the Universe beyond this era or will totally modify the eras discussed. For rationality's sake we will conclude our discussion at 10(120) years. We simply don't know enough to even speculate.

Important events

1. Era begins at ~~~ 10(100) years
2. Positronium formation ~ 10(106) years
3. High order proton-decay processes ??????
4. Era ends at 10(120) years.

Conclusion

What prompted me to consider the subjects discussed in this work? It was the fascination with the vast Cosmological time scales measured on a logarithmic time line, discussed by Fred C. Adams and Gregory Laughlin, in an article published in S&T for August, 1998. Each small tick on the time line is all the time thus far all over again! Each large tick is **10** times greater than the large tick before! We can make definite statements about our own era, the Stelliferous era. As we venture to either side of this era, we rely more and more on speculation rather than science. Mr. Adams and Mr. Laughlin adopt the Copernican Time Principle when considering the current epoch, meaning that there is no special importance to the current point in time. They resist the tendency to assign a special significance to our current epoch, the only epoch wherein life can arise and contemplate its surroundings. Since we are a part of the current Universe, the logical end to their approach is to ultimately diminish our significance, inhabitants of this beautiful oasis we call Earth, a blue miracle protecting us from the hostile, stark environment of space. I diverge with these authors here; the more we study the Universe, the more we see how special and precious and perhaps rare we all are and how the Universe was made for us, not us for it. If any of the physical constants now understood, were different, the Universe would be a totally different place, nothing of the kind we now have; would the conditions exist for life to grow and flourish?

As we have now realized, nothing, not even the Universe lasts forever. When compared to the vastness of the Universe in time and space, who are we? How tiny and insignificant, but precious are we. I would suggest that the one thing that does last forever is our treatment of each other and the bond we all share as fellow travelers on this fantastic journey of life. Our existence gives meaning to the Universe, for if we were not here, what would it all matter?

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CUSTER EVENTS CALENDAR

OBSERVATORY DUTY

Any staff on hand will be more than glad to assist in the operation of the telescope.

AT THE INSTITUTE

Public observing every Saturday night, weather permitting; Nov 1st 8th 15th, 22nd and 29th.

The Custer Comment

**TOM MADIGAN, Editor
CUSTER COMMENT**

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11772

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