

The Custer Comment

★ For The Curious ★

September 03

Volume XXXIII, Issue 9

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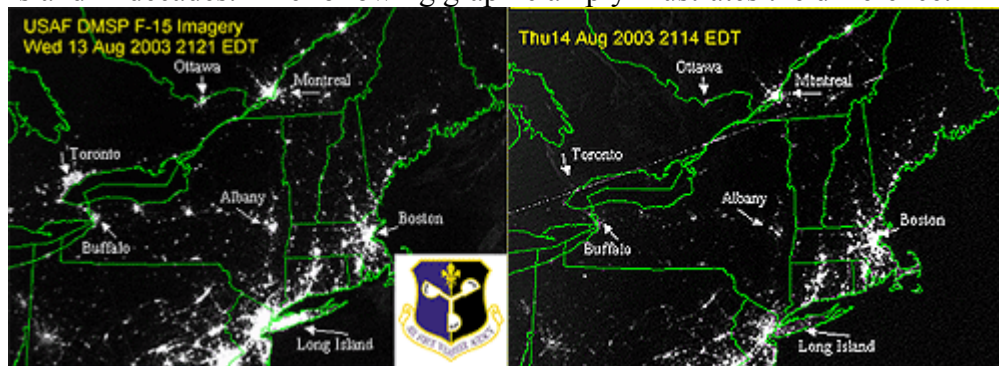
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Custer's Mars Fest and Blackout, 2003 Take Center Stage

In spite of inclement weather, our Mars Fest, 2003 was a memorable success with such a large turnout that there wasn't even standing room available. The crowd gathered to listen to Custer Member and renowned Astronomer Bob Chapin present his lecture on Mars, commemorating this historic Martian opposition, where Mars is the closest it's been in almost 60,000 years. Please see inside for details and *an exclusive interview* with Bob by Custer member Tom Stock.

Amid the political finger pointing and all the 'whose to blame' games surrounding *Blackout 2003*, Astronomers, both Amateur and Professional alike, enjoyed a rare opportunity to enjoy dark, unlit skies. Although humid, Summer conditions and a waning gibbous moon prevented the full grandeur of the Summer Sky and Milky Way from shining through, the sky conditions were markedly superior during the blackout, a spectacle not seen from Long Island in decades. The following graphic amply illustrates the difference.



Photo, courtesy USAF Weather Agency



Mars Photo, Courtesy Hubble Space Science Institute: <http://hubblesite.org/newscenter/archive/2003/22>

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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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With all the events of this past month and those that are planned for this month, this issue of the Comment won't contain the newly introduced Editorial page, as we're limited to 10 pages; look for it next month.

After the 2nd month of our offering the electronic version of The Custer Comment in lieu of mailed hardcopy, new requests for electronic delivery have dwindled to a dead crawl. There are many advantages to receiving your Custer Comment electronically, the least of which is saving Custer some sorely needed revenue for all the exciting projects that are planned. *Please send me your email address*, so you can receive your copy of the Custer Comment electronically. 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.</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 September 03

“Have your people dug ditches
So straight and true,
Merely for us to view,
Or do they serve a useful end
To feed and nourish a teeming life
On fertile plain and desert land?”

- W. E. Duckwall

(These are the final six lines of W. E. Duckwall's
“Mars”. See my July and
August Heavenly Events for the re-
mainder of this poem.)

time to study its markings as it makes $\frac{1}{2}$ of a turn for you. Prime observing time for Mars is very short, so don't waste an opportunity! JUPITER emerges in the dawn sky above the eastern horizon this month. Not far above it is the star Regulus (use binoculars) and not far below it (late in the month) is the aforementioned Mercury. SATURN rises after midnight amid the stars of Gemini, and is high in the southeast at daybreak. URANUS and NEPTUNE are both past opposition and can be found after dark with the help of binoculars and telescopes, plus a good star chart. Early in the month 5.7 magnitude Uranus is about $\frac{1}{2}$ ° due south of the 5.5 magnitude star 38 Aquarii. Neptune, at 7.9 magnitude, is less than 1° to the northwest of the 5.8 magnitude star 19 Capricorni.

Because MERCURY is at perihelion on the 27th (its closest approach to the Sun), you might suspect that its greatest elongation in the morning sky would be a poor one to view. Not so; Mercury is well above the eastern horizon after daybreak during the last week of September. VENUS has passed the solar farside into the evening sky, but don't look for her before November. Now past its perihelic opposition of August 28, MARS fades from its dazzling -2.9 magnitude to -2.1 during the month, about 50 % of its peak brilliance. On the plus side, you'll find Mars up and ready in the southeast sky as dusk reveals it, and you'll have about 8 hours of observing

Note: This is the 300th Heavenly Events page I have issued, and it has been a monthly joy for me since October, 1978. The monthly planet review and dated event formats have not changed very much in these 25 years.

- 7 Tonight is a good time to observe the surface markings of Mars. We can compare the darkest region, Syrtis Major, to the light patch of Hellas Planitia (Basin) as both are turned earthward. (Hellas is between Syrtis Major and the south polar icecap.)
- 9 Mars follows the nearly-full Moon down in the west as daybreak approaches.
- 10 Harvest Moon (also September's Fruit Moon) sets before sunrise / rises after sunset. Notice that the Moon will rise less than half an hour later each evening during the next few days. Farmers relied on that.
- 17 Around 5:11 AM the 4.4 magnitude star ν (Upsilon) Tauri will suddenly appear at the unlighted lower right edge of the waning gibbous Moon.
- 20 Saturn and the waning crescent Moon rise together in the predawn hours.
- 23 Autumn begins at 6:47 AM. (At this writing some of us are still waiting for summer.)
- 24 If you have a clear view to the east, use it between 5:30 and 6 AM to find and enjoy the marvelous trio of Jupiter, Mercury and the thin waning crescent Moon as dawn commences.
- 26 Tonight Mercury is at greatest elongation, just 18° west of the Sun.
- 28 Edwin P. Hubble died on September 28, 1953, 50 years ago today. He proved that galaxies of stars exist beyond our Milky Way (which was then referred to as “the Galaxy”), and discovered that the universe is expanding.
- 29 Retrograde ends for Mars today. (It began on July 30, only 61 days ago.)

Prepared by Robert Chapin

Heavenly Events With Bob Chapin

By Tom Stock

Custer Institute is proud to have long-time member Bob Chapin reach a milestone. The September 2003 issue of the Comment marks his 300th Heavenly Events column written. He started writing the column in 1977 when he was asked by his mentor, aging Percy M Proctor of Babylon, to take over a class for him. Bob had joined a Constellation Recognition Class in 1971 run by Proctor held at the Babylon Public Library. Bob ran the Percy M. Proctor Stargazing Club until 2001, a 24 four year run.

It takes Bob 3-4 hours to create this column. He starts by selecting an appropriate poem, usually only a part, from a file with at least 150 others that he has collected. He has two file boxes of neatly written poems, many of which were bequeathed to him by Proctor, who was an English teacher in the Babylon Schools. Bob has established a tradition on opening night of the Astronomy Jamboree held in Custer in October. He has a lively poetry session, always well attended, with audience participation. One learns a lot about astronomy and the lyrical voices of many poets who have turned to the heavens for inspiration.

Bob selects the planets, constellations, star events, etc. using his bible, The Observers Handbook, published by the Royal Astronomical Society of Canada. During a recent visit to his home, he showed me this book which he purchases each year as a source book. He spends day's carefully underlining important celestial events in red ink with carefully printed notes in his fine, minute writing. He showed me his first Celestial Evens column that was stored in a neat loose leaf binder on a shelf in his basement office.

He wrote that column in October of 1977 and he's been at it ever since. Such dedication is admirable. He calculates occultation times using tables to aid local observers. As a Cub Scout leader, for one scheduled meeting, he told his boys to bring binoculars. The meeting coincided with an important occultation of Mars with a bright star. He calculated the event to the minute and took the boys outside to see a five minute show. Who knows if he planted the seeds of interest for astronomy in any of those boys back then?

Chapin is a retired engineer for the NYS DOT. His penchant for precision and completeness in his quality control capacity during his employment has been carried over into his life long passion for astronomy. Born in Pittsburgh with a dislocated hip, at age 7 he had two major operations that left him flat on his back for months. During his recovery, his interest in astronomy was born. He soon discovered an interest in maps, pouring first over atlases which gave way to star charts... presto, his enduring interest in the heavens. In forth grade, school principal Percy Proctor spotted his science project of painted constellations on glass panes. He soon joined Proctors club in Babylon, quickly acquired a telescope, and made frequent trips to the Hayden Planetarium.

He met his future wife Nancy who lived in Wooster, Mass. Just before their marriage 40 years ago, Bob drove her from Wooster to Quebec to watch a total solar eclipse. The whole trip lasted only 20 hours because he wanted her parents to know that his intentions were on the up and up.

Eventually his second son Peter absorbed Bob's enthusiasm. In fact, Bob had to drive Peter to the Amateur Astronomical Society's meetings because Peter won the presidency at age 17. Peter built his dad a marvelous 10 inch Dobsonian reflecting telescope which Bob has used ever since.

In the late 1970's, Bob decided it was time to do some serious observing. His first objective was to earn the Messier Certificate by locating all 100 Messier objects on a checklist. He saw and sketched all of them and documented everything in a loose leaf. His method was to first sketch the surrounding star patterns near the object using his battery of books and atlases, then go out and observe. Next he located all 100 binary stars. This was followed by earning the lunar certificate for identifying 100 objects on the moon. His last project was to locate 50 Messier objects by binoculars. He surpassed that goal by 31!

He was ready when I asked him if he had any outstanding celestial observations. He reached to his shelf and pulled out 3 loose leafs with Tributes to the 70's, 80's and 90's. He had literally hundreds and hundreds of documented outstanding events. His eyes lit up and he became excited as he recounted several momentous events. However, this will have to wait for a sequel. As we talked, he quoted poet Frances Frost..."Winter is the time for choosing stars. Come out to the blazing dark and take your pick."

It is obvious that Bob Chapin has followed his over 5 decade passion for astronomy. When asked what words of advice he had for young people...
"Don't bring rock music to a star-gazing session."

You might find Bob at Robert Moses State Park at field 2 where he often spends nights observing. The large calendar hanging over his desk is filled with dates with the Universe.

Tom Stock

Manorville, August 27th, 2003.

President's Message

The Mars Fest on Aug. 16th was a big success even though the skies were overcast and there was no Mars viewing. The lecture by Bob Chapin played to an SRO audience with about 140 visitors. All the visitors were advised that there would be a chance to see Mars the following weekend, weather permitting, and to come on back if they could.

On Saturday Aug. 23rd there was a huge public turn out of viewers. The observatory staff did yeoman duty and I understand that Duff Williamson deserves special thanks for all his hard work. Donations were excellent that evening and a rather large donation was presented by the Andersons of Brooklyn in the name of Bayside Farm of Southold, NY. Thank you very much. They were a very nice addition to the Dome Repair Fund.

Due to observatory staff members work commitments, no program was scheduled for Wednesday Aug. 27th, the night of Mars closest approach. I invited several of my friends to bring their telescopes and join me out on the South lawn for some star and Mars gazing. About 20 or so people had gathered on the lawn with an assortment of telescopes and where was some fair viewing until the humidity picked up and some high haze rolled in about 11 pm. I you have not yet had a chance to see Mars yourself, it will be around for the rest of the year as Earth and Mars slowly separate again so come on out to your observatory one of these Saturday nights and get a good look.

MY thanks to who ever cut down the bushes in front of the Satellite Dish. We can once again receive the NASA Channel.

Bob Vanson

Welcome To Our New Or Returning Members

Larry Vetter of Smithtown, NY; Steve Ott of Central Islip, NY and Ashley Torres of Port Washington, NY, our youngest student member at 8 years old. Welcome one and all!

Announcements & General Interest

Custer's fiscal year and annual memberships end each June 30th. Check the top right of the address label on this copy of the Comment. If it says EXP 06/03 then your membership has just expired 6/30/03 and it is now time to send in your timely renewal so your continue to receive the Custer Comment uninterrupted. If the label says EXP 06/04, or later, you have already paid for the coming year. Make checks payable to and mail your renewals to CUSTER INSTITUTE, INC., PO Box 1204, Main Bayview Road, Southold, NY 11971, Attn: Membership. Remember, your membership renewal is tax deductible.

If you have chosen to receive the Custer Comment via the Internet, then you do not have a mailing label to remind you when your membership expires.

Yearly membership rates are: Students (to 18) and Senior Citizen - \$25; Individual - \$45; Family - \$60; Individual Sponsor - \$100; Lifetime & Corp. Sponsor - \$1000. Add a note to let us know of any address or home phone number changes and your Email address if you have one. Also indicate if you would like to *receive the Comment via Email attachment*. Thank you - The Membership Committee

Thanks to all those who volunteered on such short notice to 'man the Institute' on August 27th. In spite of the mosquito spraying, we all fared well with the public being offered a rare glimpse of the 4th rock from the sun.

Rural American String Band Music with the Home Grown String Band
Sat, Sep. 27
Country Covered Dish Supper, 5:00 PM
Music and Festivities, 7:00 PM

The Homegrown String Band is a twenty-first century incarnation of the traditional family band with a sound that falls somewhere between that of the original Carter Family and The Blue Grass Boys. The band, which was literally homegrown, consists of Georgianne and Rick Jackofsky and their two daughters, Erica and Annalee. They have been performing together at bluegrass, blues, and folk festivals, as well as in schools, libraries, and coffeehouses throughout the Northeast since 1997. Learn about this historic American music, instruments and hear it played by some of the best musicians of this genre.



Why not make it the entire day? Work by day, dinner, festivities and music by night. If you're available on the 27th, we desperately need help for the following 2 projects:

1. Work Party commencing at 8:00 AM, sharp, to construct an observing platform for Custer's newly installed and configured 14" GOTO Celestron. If there's a religious conflict with Rosh Hashanah, you can volunteer on Sunday, the 28th for back-up, finishing and cleanup. The lumber will be delivered on Friday the 26th. Anyone willing to help will need the following:
 - 1 measurer / layout
 - 1 cutter / saw operator
 - 1 assembler / hole driller
 - 1 screw gun operator
 - 1 holder / helperWe need about 5 volunteers for about 6 hours of solid work. If you can make it, contact Jim Eagan at James1Eagan@cs.com or (631) 369-4517.
2. Assist Tom Carey in cleanup and preparation for the upcoming Astronomy Jamboree.

The Universe, Past, Present and Future

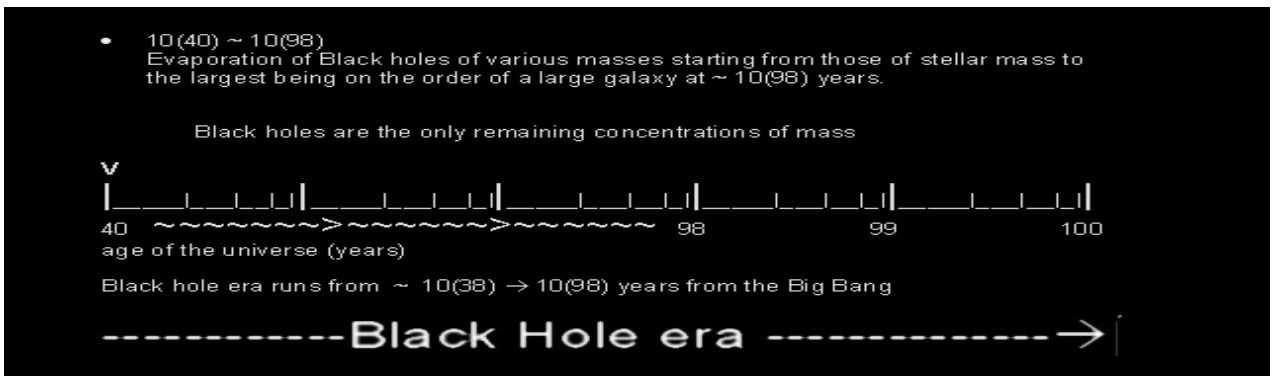
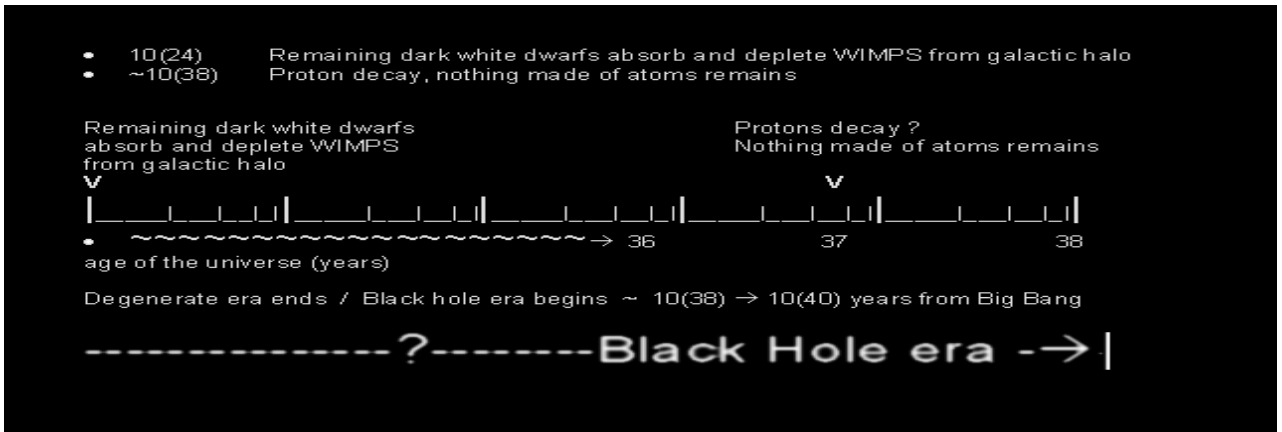
A treatise by Thomas J. Madigan

The Black Hole Era

Fifth installment in a multi-part series.

Being unaffected by proton decay, only black holes remain; stark specters, remnants of a long dead Universe. Even black holes can't last forever, they eventually evaporate by the mechanism known as Hawking radiation, named after the present day theorist that has postulated it. A black hole of one Solar mass may last for 10^{65} years. A black hole with the mass of a typical galaxy may finally evaporate after 10^{98} or 10^{100} years. This era draws to a close when all the black holes are gone.

Time scales here are staggering. Each Cosmological decade is 10 times longer than its predecessor, each component of ten in the decade is again as old as the one before it. If there ever was a natural approximation to the term eternity, this would have to be it.



Important Events

1. Black hole era begins $\sim 10^{38} - 10^{40}$ years
2. Stellar mass black holes evaporate $\sim 10^{65}$ years
3. Galaxy mass black holes evaporate $\sim 10^{98} - 10^{100}$ years

Wasteful Commercial Lighting Causes Debilitating Glare, Sky Glow

TO: Dark Sky Advocates

RE: Good photo of the ubiquitous LIPA Nightlight Floodlight.



There are 16,000 of these, installed all across Long Island, with 250, 400 or 1000 watt High Intensity Discharge lamps. They are leased to commercial customers for a monthly fee, and are attached to public utility poles, mostly situated in the public right of way. Some are even mounted across the roadway from the contracting business.

They are hardwired to be "on" dusk-to-dawn, regardless of need, and, as you can see, spread more than half their light out into the atmosphere, missing the ground entirely.

These lights do not conform to safe light level guidelines, shielding recommendations, or light trespass limitations.

The retrofit "shields" that are available for these "Turnpike" style lights, does very little to change the "off target" spill light. If they are aimed down, the light levels are increased so much, that there is over ten times the amount of light on the ground, that would be required for any conceivable outdoor lighting application.

These lights contribute to conditions of debilitating glare, "skyglow", and excess and unnecessary energy use.

Susan Harder,
Dark Sky Society

Editor: While the memories of *Blackout, 2003* are still fresh in our elected officials' minds, now might be a good time to contact them and express your displeasure with wasteful practices such as this. Education is key here, as most decisions concerning outdoor lighting are made out of sheer ignorance.

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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; Sep 6th 13th 20th and 27th.

The Custer Comment

TOM MADIGAN, Editor
CUSTER COMMENT

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PATCHOGUE, NY

11772

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