

# The Custer Comment

★ For The Curious ★

August 2006

Volume XXXVI, Issue 8

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## Asteroid "Tonyhoffman" Named in Honor of Custer's Tony Hoffman!

Also, Second Asteroid, 2005 JB22, Discovered by Tony



Image, courtesy of Spacewatch and University of Arizona's Lunar and Planetary Laboratory

Discovery photo of asteroid 2005 JB22. The asteroid is identified by the diagonal streak in the center of the image. This *is not* asteroid *Tonyhoffman*. The asteroid now known as 112900 *Tonyhoffman* was named for Tony by its discoverer, Rob Matson, a California amateur with Tony playing no role in its discovery. Matson has found more than 50 SOHO comets, as well as several hundred asteroids in the archives of the NEAT (Near Earth Asteroid Tracking - <http://neat.jpl.nasa.gov>) sky survey.

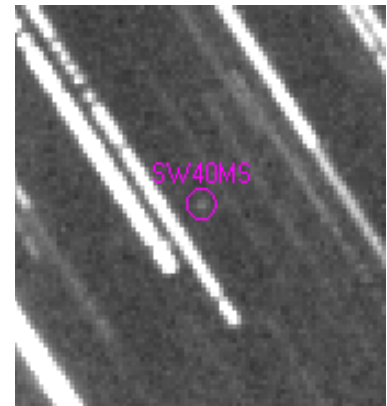


Image credit: Great Shefford Observatory

Image of 2005 JB22 (when still known by its provisional designation, SW40MS) from May 8, 2005 by Peter Birtwhistle, Great Shefford Observatory, a composite of 71 30-second exposures guided at sidereal rate taken through a 0.3-meter SCT with Apogee AP47p CCD camera.

As a volunteer for Spacewatch FMO, a project of the University of Arizona's Lunar and Planetary Laboratory, Custer's Tony Hoffman is the principal discoverer of Asteroid 2005 JB22. He shares credit for the discovery with the members of the Spacewatch team who confirmed the discovery. For additional images and details, please see full article inside. Congratulations, Tony!

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### **Announcements & General Interest**

#### **Internet Hoax**

There is a hoax being widely circulated on the Internet stating that August 27<sup>th</sup> is the last time we will have the opportunity to observe Mars during what is purported to be the most favorable Opposition in 50,000 years. This supposedly unparalleled event refers to the Martian Opposition of August 27<sup>th</sup>, 2003 and the news is now being disseminated 3 years after the actual event probably because someone forwarded an old story of that quite favorable Martian Opposition one to many times in a chain mail scenario, unwittingly propagating a hoax. Another, similar, hoax that is being widely disseminated states that Mars will appear in the sky as the same size as the full moon on this same date. This is quite impossible as Mars would have to be transported about 60 million miles closer at opposition to do so. The moon appears as a ½° disk or 30 arcminutes in the sky and is 400,000 Km distant on average. The disk of Mars subtends an angle between 20 and 30 arcseconds or 60 times smaller than the moon and is between .5 Au (75 MKm) and 2.5 Au (375 MKm) distant depending upon the respective orbital placement of Earth and Mars. It is, therefore, quite impossible for Mars to appear in the sky as the same size as the full moon.

## Editor's Column

### Tom Madigan, Editor

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Cutoff for submissions is the 15<sup>th</sup> 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 accept my sincere apologies for the lateness of this month's issue. Over the past year, I've been endeavoring to publish the Custer Comment no later than the 3<sup>rd</sup> of the month. There have been times when it has been published by the 5<sup>th</sup> of the month with one particular month as late as the 7<sup>th</sup>; ideally, it should be published no later than the first day of the month to be considered "on time". Going forward, this will be my goal.

Over the past several weeks, I've undergone several life changing events that I'm not at liberty to fully disclose here in the public domain. Suffice it to say, I've been preoccupied with mounting some semblance of a recovery from these events.

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*

## ***The Discovery of an Asteroid***

Tony Hoffman and his tale of 2 asteroids!

By Tom Madigan

*...the planet that the little prince came from was scarcely any larger than a house.*

*-- Antoine de Saint-Exupery*

The following was culled directly from Tony's web site and represents the discoverer's account in his own words.

On May 7, 2005, I found the near-Earth asteroid that has since been designated 2005 JB22 as a volunteer reviewer for the ***Spacewatch FMO Project*** (<http://home.earthlink.net/~tonyhoffman/FMOproject.htm>). Before making this find, I had searched approximately 1,565 Spacewatch images since the previous September. Over that period, I had submitted more than 1,300 FMO candidates and resubmitted about 80 of the most promising ones, with no luck. On this particular image, though, I noticed a diffuse streak reminiscent of FMOs I'd seen on the project site, so I submitted it. When I received the triplet of images back from Spacewatch, it still looked promising, so I resubmitted it. The next morning, I received an e-mail from Spacewatch, telling me it was a real FMO, and it had been posted on the Near-Earth Object Confirmation Page (<http://cfa-www.harvard.edu/iau/NEO/ToConfirm.html> - NEOCP). Spacewatch had only been able to get three positions for the asteroid, so I anxiously awaited for the NEOCP to be updated. (about a quarter of the asteroids found by the FMO Project have proven unconfirmable due to faintness and/or fast motion.) That evening, the page was updated as confirmations were received, including one from Peter Birtwhistle of Great Shefford Observatory (<http://www.birtwhi.demon.co.uk>). Great Shefford Observatory in the UK, whom I'd met last year at the International Workshop on Cometary Astronomy. Peter's composite image of the asteroid appears below. The discovery notice (<http://cfa-www.harvard.edu/mpec/K05/K05J35.html>) was released the next day; it showed that the asteroid was also confirmed by the Catalina Sky Survey and the Grassland Observatory in Arizona, Table Mountain Observatory in California, and Calar Alto Observatory in Spain.

*Tony Hoffman*



In this unrelated image obtained by Tony, the ***Big Dipper*** can be seen ascending the Northeastern sky directly above Custer's main observing turret awaiting delivery of the new dome. Note that the middle star in the handle of this famous asterism is resolved into its respective components, Alcor and Mizar. ***Great shot, Tony!***

As noted on the front page, asteroid ***2002 QS50***, now known as ***112900 Tonyhoffman*** is not 2005 JB22 and, ironically, Tony shares no credit in its discovery.

***Editor:*** Tony Hoffman is also a member of AAA of New York (<http://www.aaa.org>). Additional details and images can be found at his website: <http://home.earthlink.net/~tonyhoffman/astronomy.htm>

## Gift Corner & Classifieds

**We Have Meteorites!**

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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](mailto: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](mailto: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](mailto: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

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**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 August 2006

“ Rise, slow-paced Moon  
And sweep the sky  
Of all the desert heat.  
Come welcome wind and  
Whisper, a lullaby  
To all the scurrying feet  
Of each small creature.  
And let the night, then,  
Pattern, a quilt of stars  
For all those who would sleep. “

- Alice Augusta Gaines

Planetary pickin's are pretty slim this August. MERCURY, for example, does a little jack-in-the-box routine beneath VENUS early in the month and quickly disappears after midmonth. Venus, low in the east-northeast an hour before sunrise, drops noticeably lower by month's end. MARS is now lost in the bright evening sky. Both Venus and Mars will reach the solar farside 4½ days apart in late October, traveling in opposite directions (relative to the Earth-Sun line of “view”) and reaching a mutual conjunction which will be seen by nobody. Now moving eastward again through Libra toward the wide and bright double star Zubenelgenubi, JUPITER sets in the west-southwest around 11 PM at midmonth. SATURN is behind the Sun on the 7<sup>th</sup>, but can be seen late in the month in the dawn sky, passing Venus on the 26<sup>th</sup>. Finally and faintly, NEPTUNE reaches opposition

on the 11<sup>th</sup> in Capricornus, and URANUS nears opposition in Aquarius.

- 1 The first quarter Moon leads Jupiter down in the southwest.
- 3 On August 3, 1976, just 2 weeks after Viking 1 landed on Mars, NASA's Viking 2 lander duplicated the feat on Utopia Planitia.
- 3 Around 9:06 PM the 4.8 magnitude star 1 Scorpii will suddenly disappear along the dark left limb of the waxing gibbous Moon.
- 5 Peaking at 7.9 magnitude, asteroid (6) Hebe is at opposition today. Tonight it can be located by searching, preferably with telescope, the area of sky 1½° due south of the globular cluster M72 in Aquarius. Hebe's southward path through the end of October is given in the 2006 RASC Observers Handbook.
- 7 Mercury is at greatest elongation west of the Sun.
- 7 Around 9:27 PM the 5.0 magnitude star 60 Sagittarii will be occulted behind the dark left edge of the nearly-full Moon. The Moon's glare can make it a challenge to observe.
- 9 Full Sturgeon Moon sets around sunrise.
- 10 Mercury can be seen about 2½° beneath Venus, low in the east an hour before sunrise. It won't get closer this time around.
- 10 Neptune, at 7.8 magnitude, is at opposition after midnight tonight. Its path through Capricornus can be tracked by using charts found in 2006 Astronomical Calendar, 2006 RASC Observers Handbook, or Sky & Telescope or Astronomy Magazines. At opposition, Neptune is in the sky all night.
- 12 Asteroid (1) Ceres, peaking at 7.6 magnitude, is at opposition in Piscis Austrinus, several degrees west of Fomalhaut. Again, see the 2006 RASC Observers Handbook to track its motion.
- 12 This year's Perseid meteor display will be seriously degraded by bright moonlight.
- 22 A very thin crescent Moon may be seen beneath Venus this morning.
- 26 Venus and Saturn are in very close conjunction this evening. Unfortunately, we'll have to wait until dawn tomorrow to find Saturn just above Venus in the brightening sky.
- 29 For the second time this month Jupiter and the Moon pair up in the southwest sky at nightfall.

*Prepared by Robert Chapin*

## ***Lighting is still in the Dark Age***

By Darren Baskill, PhD

**Light pollution is not just a waste of money, argues astronomer Darren Baskill in this week's Green Room. He says badly designed lighting is also having an impact on the environment and our health, as well as denying millions of people the right to enjoy the beauty of the night sky.**

**Our desire for night-time lighting in a 24-hour society seemingly justifies any amount of wasted light**

Think of light pollution, and many will think of suffering astronomers.

While the orange smog of night-time light pollution is the most graphic demonstration of wasted light obliterating our view of the stars, it is the financial, environmental and human cost of light pollution that is truly astronomical.

Light pollution is wasted artificial light; light that shines where it is neither needed nor wanted. Most light fittings waste a large fraction of the light they produce. More than 300 megawatts worth of light is wasted skywards from UK streetlights alone, at an annual cost of about £100m (\$190m).

Even the most modern streetlights divert light away from the street, and shine light directly into the sky. This makes the night sky brighter and our streets dimmer, a "double whammy" for a cycling astronomer like me, suffering the evening challenge of avoiding yet another puncture caused by debris hidden in the gutter.

One medium-sized coal-fired power station is required to solely generate that wasted energy, which results in a million tonnes of carbon dioxide pollution being pumped into the atmosphere each year. Include inefficient lighting from homes, businesses, churches and sports facilities, and you begin to comprehend that the wastage is on a massive scale.

And light pollution is getting rapidly worse; according to the Campaign for the Protection of Rural England (CPRE), light pollution in the UK increased by a staggering 24% between 1993 and 2000, making Britain the third most light-polluted country in Europe.

### **False security**

Our desire for night-time lighting in a 24-hour society seemingly justifies any amount of wasted light - which has had tragic consequences.

In Oxfordshire a man was killed when a pub floodlight blinded a car driver. In Australia, ill-directed lighting surrounding an airport caused a fatal air crash.

Intrusive nuisance lighting can cause stress, leading to deterioration in health, heart attacks, and even thoughts of suicide.

Exposure to light at night may also increase the risk of cancer. Dr Chris Idzikowski, director of the Sleep Assessment and Advisory Service, says: "[It] could lead to a disruption of sleeping patterns, hyper-activity and may have a negative impact on a child's health."

Inefficient lighting has a detrimental impact on wildlife too, disrupting natural feeding and breeding cycles. A survey in Toronto found more than 2,000 migrating birds of 89 different species dead beneath brightly lit skyscrapers. Bats, moths and other insects such as glow-worms are also adversely affected.

The most common justification for lighting, however inefficient, is security, and the naive belief that "the brighter the light, the better" prevails. Visit any DIY store, and the shelves are brimming with 150W, 300W and even 500W floodlights.

However, the government's home security website states that such lighting "...is unfortunate, as in many locations this is the most inappropriate form of lighting available".

When you consider that the Smalls lighthouse (situated more than 20 miles off the coast of Wales) has a 35-watt bulb that produces a beam of light that is visible for 21 miles, you can understand why.

Ironically, such blindingly bright so-called "security" floodlights can hide criminal activity in their glare, and because the lights are frequently triggered by cats on a night-time prowl, neighbours soon learn to try to ignore them.

Research into street lighting by the UK Home Office showed that "better lighting by itself has very little effect on crime", suggesting that lighting can help everyone see their surroundings - including criminals.

### **Dimming down**

The Government has introduced the Clean Neighbourhoods Act (2005), which aims to make light nuisance subject to criminal law. Unfortunately, the Act includes a long list of inexplicable exceptions. While a home owner can now be fined for installing obtrusive lighting, a bus station cannot. An increasing number of inefficiently floodlit buildings, especially churches, may also escape control.

While some local councils understand the problems of light pollution, others exacerbate the problem. Stockport City Council recently installed new street lighting that shines light into homes at five times the recommended levels.

Things are different in other countries. Light pollution laws exist in the Czech Republic, Italy, Chile and parts of the US. In 2005, the City of Calgary finished replacing all 37,500 street lights with efficient lighting, saving \$2m (£0.9m) per year - which will offset the replacement costs in just six years.

## HAVE YOUR SAY

### **While many people have heard of light pollution, regrettably few make the small effort needed to eradicate it**

Elsewhere, street lighting in Rome dims after midnight, reducing lighting costs by 40%, and in the US, the Long Island Power Authority converted all their outdoor operational-yard lighting to efficient fixtures.

These all prove that you can have light without light pollution. So please, make sure your home or business lighting only shines where it is needed and with appropriate power, without wasting light upwards into the sky, or outwards into neighbouring homes. Walk around your lights, and make sure they are not visible from beyond the area that needs to be lit.

Likewise for street-lighting, where dimming technology should be used wherever possible - it halved energy costs on the M65 while reducing visual stress to drivers.

These small steps will save significant amounts of energy and money, reducing carbon dioxide emissions, and improve our view of both the streets and the sky. While many people have heard of light pollution, regrettably few make the small effort needed to eradicate it.

Everyone needs lighting, including astronomers, but that need should not be used as an excuse to be unnecessarily inefficient on a massive scale. No-one should be denied the right to view, explore and be inspired by the night sky.

*Dr Darren Baskill is an astrophysicist at the University of Leicester, working on the European XMM-Newton Space Telescope mission*

*He is also a member of the Campaign for Dark-Skies, a group initially set-up by amateur astronomers to encourage the use of efficient, responsible lighting*

*The Green Room is a series of opinion pieces on environmental issues running weekly on the BBC News website.*

A series of thought-provoking environmental opinion pieces

Story from BBC NEWS:

<http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/4794249.stm>

**Editor:** This article was reproduced with permission and represents the viewpoint of the author. Credit is attributed to Dr Darren Baskill and the BBC News Service(<http://www.bbc.co.uk/news>)

## **Highlights for August 2006**

### **Understanding Chronic Fatigue Syndrome And Fibromyalgia**

According to the Centers for Disease Control, an estimated million Americans suffer from CFS/FM. The cause is unknown and treatments vary in effectiveness. To gain insight into causative factors, correlates with other illnesses, and the efficacy of treatments, a survey is being conducted. Custer Board Member and Observatory Director, Jeffrey Owen Katz, Ph.D., has spent over a decade studying CFS/FM. His research is shedding new light on the nature and most effective treatments of these syndromes. Dr. Katz will discuss his findings, some of which will soon be published in an upcoming JAMA article in collaboration with Dr. Dennis Gage, an endocrinologist specializing in these disorders. Refreshments and observing (weather permitting) follow.

#### **Respondents Needed**

There are two parts to this survey. Both parts may be completed by CFS/FM sufferers. One part, however, also needs responses from healthy individuals or those who have other disorders. Please take a few moments now to complete the survey, which may be found by clicking on the following link:

<http://www.scientific-consultants.com/cfs-main.html>

**When:** Saturday, August 26<sup>th</sup>, 6:00 – 7:30 PM;

**Where:** Custer Institute, Southold;

**Instructor:** Jeffrey Katz, PhD

**Suggested Donation:** \$8.00, Custer members, \$10.00 Non-members

### **Custer's Bruce Martin Discusses "What's Behind the Click"**

Bruce Alan Martin, a Custer Member, 35-year Internet veteran and project lead for major software projects at Brookhaven National Laboratory, Grumman, Robotic Vision and Microsoft, on August 19<sup>th</sup>, provided those in attendance with a bird's eye view of "what's behind the click". The lecture covered everything from the early days of ARPANET (the network that would someday become the Internet) to hyperlinks to the structure and dynamics of the Central Processing Unit (CPU) and Memory modules. Thank you Bruce for a compelling and informative talk!



Having just discussed ARPANET, the precursor to the Internet and the method of communication between universities prior to the World Wide Web, Bruce Martin makes a point during his discussion of Networking and Telecommunications.

Image, courtesy Tom Madigan

## ***New Horizons Salutes Voyager***

As New Horizons cruised toward the edge of the asteroid belt and a date with Jupiter, the spacecraft that revolutionized our knowledge of that giant planet more than 25 years ago made history again this week. On Aug. 15, NASA's enduring Voyager 1, already Earth's farthest-flung robotic ambassador, became the first spacecraft to reach a distance of 100 astronomical units (AU) from the Sun.

That's 100 times farther from the Sun than the Earth is, equivalent to 9.3 billion miles or 15 billion kilometers. Though New Horizons will also reach 100 AU, it will never pass Voyager 1, because Voyager was boosted by multiple gravity assists that make its speed faster than New Horizons will travel. Voyager 1 is escaping the solar system at 17 kilometers per second. When New Horizons reaches that same distance 32 years from now, propelled by a single planetary swingby, it will be moving about 13 kilometers per second.

"Voyager blazed an historic trail of exploration across the giant planets and out into the distant heliosphere. Now New Horizons follows, almost 30 years later, exploring the Sun's population of Kuiper Belt ice dwarfs for the first time," says New Horizons Principal Investigator Alan Stern, of the Southwest Research Institute. "From the generation of New Horizons explorers to the Voyager generation of explorers, we say congratulations on reaching 100 AU, you showed us all the way, keep exploring, onward, ever onward!"

New Horizons will reach 100 AU in December 2038, long after the probe passes through the Pluto system and enters the Kuiper Belt. But another milestone occurs much sooner: next week New Horizons crosses the outer boundary of the main asteroid belt at 3.3 AU (nearly 307 million miles, or 494 million kilometers) from the Sun, just seven months after launch.

Read more about Voyagers 1 and 2: <http://www.jpl.nasa.gov/news/features.cfm?feature=1150>.  
Follow New Horizons on its own voyage: [http://pluto.jhuapl.edu/mission/whereis\\_nh.php](http://pluto.jhuapl.edu/mission/whereis_nh.php).

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### **Pluto-Charon: A True Double Planet**

Under proposed International Astronomical Union definitions, two planets that orbit each other around a barycenter (or center of mass) between them are a binary planet. Those same definitions would expand the "family" of planets to include Charon, promoting Pluto's large companion from moon to planet and securing the pair's status as the first and (so far) only binary planet in the solar system.

Read more about binary worlds in the New Horizons Science section:  
[http://pluto.jhuapl.edu/science/everything\\_pluto/10\\_binary\\_planet.html](http://pluto.jhuapl.edu/science/everything_pluto/10_binary_planet.html)

Read the IAU press release on proposed planet definitions:  
[http://www.iau2006.org/mirror/www.iau.org/iau0601/iau0601\\_release.html](http://www.iau2006.org/mirror/www.iau.org/iau0601/iau0601_release.html)

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New Horizons is the first mission to Pluto and the Kuiper Belt of rocky, icy objects beyond. For more information on the mission, visit <http://pluto.jhuapl.edu>.

**Editor:** This article has been reproduced with permission. Credit is attributed to John's Hopkins University Applied Physics Lab and JPL.

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