

IO – October 2007

Issue 2007-10
Eugene Astronomical Society



Eugene Astronomical Society,
Annual Club Dues \$25, Board Members:
President: Sam Pitts - 688-7330
Secretary: Jerry Olton - 343-4758
Jacob Strandlien, Tommy Lightning Bolt
& Fred Domineack

www.eugeneastro.org

EAS is a Proud Member of:

The Astronomical League
The World's Largest Federation of Amateur Astronomers

IO editor- sampitts@comcast.net 688-7330

Io (EYE-oh) is nearest to Jupiter and fastest orbiting of the four Galilean moons

Monday- October 1st MEETING EUGENE ASTRONOMICAL SOCIETY

Held at:

Science Factory Children's Museum & Planetarium
2300 Leo Harris Parkway, Eugene
SW of Autzen Stadium

The Dark Side of Light Pollution

By: Dennis "Whitey" Lueck

One by one, our society has addressed the problems of air pollution, water pollution, and noise pollution because everyone deserves access to clean air, clean water, and peace and quiet.

But there's another "natural resource" which remains badly polluted and which needs to be cleaned up: our night skies. For as long as humans have lived on the planet, we've been able on clear nights to raise our eyes in wonder at the star-studded heavens. But that changed dramatically over the past few decades. The polluted night skies above us these days are due to poorly designed outdoor lights that have proliferated since World War Two. Fortunately, the solution to this problem is easy and inexpensive.

Since 2001, Eugene has had an Outdoor Lighting Ordinance in our land use code that requires all new outdoor lighting fixtures to shine their light only onto the property on which they are installed--not up into the sky or off the property.

Some commercial development projects completed since 2001 do an excellent job of using "appropriate levels of well directed light" (e.g., Oakway Center); many, however, fall far short of meeting the standards. And very little progress has been made in residential outdoor lighting; in fact, it is difficult to find legal light fixtures at local home improvement stores.

What happened? Why hasn't there been more and faster progress? And what can we as individuals do to ensure that new lights comply with the ordinance?

Whitey Lueck will discuss these topics and answer your questions about outdoor lighting and restoring the dark night skies that we all deserve to see once again. *See Page 3 "Light Pollution" for more information*

Jacob Strandlien will keep you up to date with his monthly presentation on current events and news in Space & Astronomy. Jacob always has some interesting news and great images to share with the group.

We always encourage audience participation during our meetings. EAS meetings are traditionally times when we learn about astronomy and share others' experiences and knowledge of astronomy and the night sky.

Come and enjoy the wonders of the night sky with the Eugene Astronomical Society at The Science Factory's comfortable Planetarium.

The presentation & meeting will begin at 7:00 PM in the Planetarium on Monday October 1, 2007.

Meeting Day to Change starting in November 2007

EAS general meeting will now be on the 1st Wednesday of each month at 7:00 PM except for holidays.

Join the EAS mail list→<http://eugeneastro.org/mailman/listinfo/org.eugeneastro.general>



Observing in October

October 3	October 10	October 19	October 25
Mercury Set 7:29 PM	Mercury Set 7:08 PM	Mercury Set 6:29 PM	Mercury Set 5:58 PM
Venus Rise 3:33 AM	Venus Rise 3:31 AM	Venus Rise 3:34 AM	Venus Rise 3:38 AM
Mars Rise 10:49 PM	Mars Rise 10:33 PM	Mars Rise 10:10 PM	Mars Rise 9:53 PM
Jupiter Set 9:46 PM	Jupiter Set 9:22 PM	Jupiter Set 8:53 PM	Jupiter Set 8:33 PM
Saturn Rise 4:01 AM	Saturn Rise 3:37 AM	Saturn Rise 3:07 AM	Saturn Rise 2:46 AM
Uranus Set 5:12 AM	Uranus Set 4:43 AM	Uranus Set 4:06 AM	Uranus Set 3:42 AM
Neptune Set 2:55 AM	Neptune Set 2:27 AM	Neptune Set 1:51 AM	Neptune Set 1:27 AM
Pluto Set 11:02 PM	Pluto Set 10:35 PM	Pluto Set 10:00 PM	Pluto Set 9:37 PM

All times: U.S. Pacific Daylight Time (March 11-November 4, 2007) = UT - 7 hours. Pacific Standard Time (Nov.-March) = UT-8

Date	Moonrise	Moonsset	Sunrise	Sunset	Twilight Begin	Twilight End
10/1/2007	21:54	13:41	07:10	18:53	05:34	20:29
10/2/2007	22:59	14:43	07:11	18:52	05:35	20:27
10/3/2007	-----	15:32	07:12	18:50	05:36	20:26
10/4/2007	00:10	16:09	07:14	18:48	05:37	20:24
10/5/2007	01:23	16:37	07:15	18:46	05:39	20:22
10/6/2007	02:34	17:00	07:16	18:44	05:40	20:20
10/7/2007	03:42	17:20	07:17	18:43	05:41	20:18
10/8/2007	04:48	17:37	07:18	18:41	05:42	20:16
10/9/2007	05:52	17:54	07:20	18:39	05:44	20:15
10/10/2007	06:56	18:11	07:21	18:37	05:45	20:13
10/11/2007	07:59	18:30	07:22	18:35	05:46	20:11
10/12/2007	09:04	18:51	07:23	18:34	05:47	20:10
10/13/2007	10:09	19:17	07:25	18:32	05:48	20:08
10/14/2007	11:14	19:49	07:26	18:30	05:50	20:06
10/15/2007	12:16	20:29	07:27	18:29	05:51	20:05
10/16/2007	13:14	21:19	07:28	18:27	05:52	20:03
10/17/2007	14:03	22:18	07:30	18:25	05:53	20:01
10/18/2007	14:44	23:25	07:31	18:24	05:54	20:00
10/19/2007	15:18	-----	07:32	18:22	05:56	19:58
10/20/2007	15:46	00:36	07:33	18:20	05:57	19:57
10/21/2007	16:09	01:51	07:35	18:19	05:58	19:55
10/22/2007	16:31	03:07	07:36	18:17	05:59	19:54
10/23/2007	16:53	04:24	07:37	18:16	06:00	19:52
10/24/2007	17:15	05:43	07:38	18:14	06:01	19:51
10/25/2007	17:41	07:06	07:40	18:13	06:03	19:50
10/26/2007	18:11	08:31	07:41	18:11	06:04	19:48
10/27/2007	18:51	09:57	07:42	18:10	06:05	19:47
10/28/2007	19:42	11:19	07:44	18:08	06:06	19:46
10/29/2007	20:45	12:30	07:45	18:07	06:07	19:44
10/30/2007	21:57	13:26	07:46	18:05	06:08	19:43

Current Occultations & Other Events

Visit Derek C Breit's web site

"BREIT IDEAS Observatory"

<http://www.poyntsource.com/New/Regions/EAS.htm>

Go to Regional Events and click on the Eugene, Oregon section. This will take you to a current list of Lunar & asteroid events for the Eugene area. Breit continues to update and add to his site weekly if not daily. This is a site to place in your favorites list and visit often.



All times are for Eugene, Oregon Latitude 44° 3' 8" Longitude 123° 5' 8" for listed date

Events

OCTOBER 2007

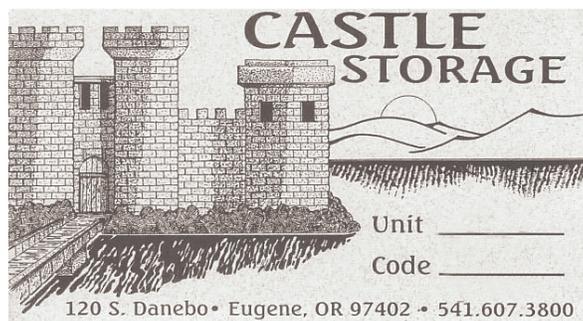
1	Chang'e 1 CZ-3A Launch (Chinese Lunar Orbiter); The Great World Wide Star Count ¹
2	Asteroid 2007 RR12 Near-Earth Flyby (0.093 AU)
3	Lecture: Taking a Hit: Asteroid Impacts & Evolution, Los Altos, California
4	50th Anniversary (1957), Sputnik 1 Launch; DSP-23 Delta 4 Heavy Launch; World Space Week
5	Robert Goddard's 125th Birthday (1882); 8th Annual White Sands Star Party, Alamogordo, New Mexico
9	Draconids Meteor Shower Peak ; Asteroid 2004 TJ10 Near-Earth Flyby (0.080 AU); Asteroid 2007 RE1 Near-Earth Flyby (0.095 AU)
10	Soyuz TMA-11 Soyuz FG Launch (International Space Station 15S); 40th Anniversary (1967), Enactment of the Outer Space Treaty
11	Asteroid 2006 QQ56 Near-Earth Flyby (0.080 AU)
12	Asteroid 2001 CA21 Near-Earth Flyby (0.062 AU) <i>5.8 million miles</i>
13	Sally Ride Science Festival, Los Angeles, California; Stargazing Tour & Workshop, Flagstaff, Arizona
14	60th Anniversary (1947), Chuck Yeager Breaks Sound Barrier
16	Comet P/2007 R2 (Gibbs) Closest Approach To Earth (0.636 AU)
17	GPS 2RM F-4 Delta 2 Launch; Sirius 4 Proton M Launch;
18	Asteroid 1999 TM12 Near-Earth Flyby (0.080 AU); Lecture: Predicting Climate Change - Removing the Mystery, Pasadena, California; 30th Anniversary (1977), Charles Kowal's Discovery of Chiron; 40th Anniversary (1967), Venera 4, Venus Landing
21	Orionids Meteor Shower Peak ; Globalstar-10 (No. 69-72) Soyuz FG-Fregat Launch; Yerkes Observatory's 110th Birthday (1897)
22	Asteroid 2340 Hathor Near-Earth Flyby (0.060 AU) <i>5.6 million miles</i> ;
23	STS-120 Launch, Space Shuttle Discovery, Node2 (International Space Station 10A)
25	Cosmos-Glonass (M9/M10/M10) Proton K-DM2 Launch
26	Asteroid 48475 (1991 UD2) Occults HIP 13108 (5.8 Magnitude Star)
28	Comet C/2007 F1 (LONEOS) Perihelion (0.402 AU)

AU=Astronomical Unit (92,955,800 miles)

¹ <http://space.about.com/gi/dynamic/offsite.htm?zi=1/XJ&sdn=space&zu=http%3A%2F%2Fwww2.jpl.nasa.gov%2Fcalendar%2F>

Star Parties:

- September 28th (Friday) Mount Pisgah
- October 4th (Thursday) Jefferson Elementary School (NE of Albany) contact Rick kang



Thank You Castle Storage

Board member Tommy Lightning Bolt was instrumental in getting a storage unit from the owners of Castle Storage for EAS to store its telescopes and equipment. EAS would like to thank Castle Storage for their generosity and support for our group. Please give them a call if you need a storage space and tell your friends. They are great people and offer secure and quality units.

November 4, 2007, 2:00 AM -Daylight Savings Time ends. Turn clocks back 1 hour.

Continued from Page 1:

Light Pollution

By: Dennis “Whitey” Lueck

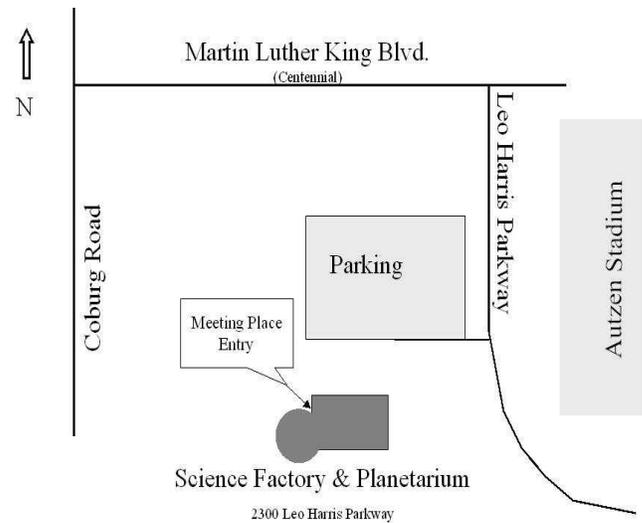
Whitey is active in a variety of efforts to improve community livability, including street tree planting, the Trains-to-Trees Project, landscaping with plants native to the Willamette Valley, and improving outdoor lighting.

In the late 1990s, when he and two other interested citizens learned that the City was updating its land use code--but staff had no plans to address the issue of outdoor lighting-- the three of them decided to write the lighting section of the code themselves. The new code, which went into effect in August 2001 requires, among other things, that all new residential and commercial developments use shielded light fixtures that direct appropriate levels of light downward, where it's needed, instead of onto neighboring properties and up into the sky.

Whitey also runs Out-of-Doors, a small business that provides nature tours throughout the West. And he teaches in the Department of Landscape Architecture at the University of Oregon.

The EAS holds club meetings on the first Monday of each month (*except Holidays*) at 7 PM, **changes to 1st Wednesday of every month November 2007**, at The Science Factory Children’s Museum & Planetarium. Guests are welcome to visit; we ask for a \$1 guest contribution. Meetings feature speakers with presentations on topics of interest to club members, current viewing opportunities, telescope help, and star party planning.

EAS thanks the Science Factory Children’s Museum & Planetarium for providing the Planetarium for our monthly meetings.



Join the EAS mail list—<http://eugeneastro.org/mailman/listinfo/org.eugeneastro.general>

Keep up to date on opportunities to join local amateur astronomer outings to observe the night skies. This is a great opportunity to get advice in setting up your own equipment from seasoned veterans or just to look through different scopes. They always have fun and enjoy helping newcomers.

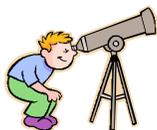


Mount Pisgah Star Party September 28th



EAS is holding the annual star party at mount Pisgah on September 28th (Friday). Set-up will be from 6-8 PM, night sky orientation & slide show at 8 PM by Sam Pitts, viewing starting at 8:30 PM. Scope setup is on the upper parking lot (only vehicles with scopes); parking lower level. We can also setup scopes around the pavilion. So far we have 7+ members signed-up. This is a fun star party with a large public turnout so come on out and share in the fun.

You can contact Sam if you have any questions at 688-7330.



Jefferson Elementary School Star Party October 4th

I've been invited to do outreach at Jefferson Elementary School (NE of Albany) in early October, and they'd like to hold a star party Thursday evening, October 4th. The contact teacher is Ms. Jean Stohlman. She's scouting out locations near the Jefferson schools (apparently all three (Elem, Middle, High) are adjacent.) I suggested that perhaps folks from HOTVA, NS45, and EAS might be interested in bringing telescopes, so she extends the invitation, and has offered some funds toward fuel. If you could please circulate the word and have interested sky-guides contact me, I'll serve as the liaison/coordinator. Thanks much, hope everyone had a great time at OSP and that the clear skies are back!

Rick Kang - 683-1381

International Dark-Sky Association (IDA)

Our mission is to preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting.

<http://www.darksky.org/>



Light Pollution = *Any adverse effect of artificial light including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste.*

← Photo credit: Guillaume Poulin, 1st place winner in the Digital Dark Skies contest: http://www.darksky.org/news/newsletters/60-69/nl66_art.html

Black areas depict Light Pollution in USA
Photo Courtesy from International Dark Sky Web site: ↓



continued from page 5:

International Dark-Sky Association (IDA)

Mission statement:

The mission of the International Dark-Sky Association (IDA) is to preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting.

Goals:

1. Stop the adverse effects of light pollution on dark skies, including

- Energy waste and the air and water pollution caused by energy waste
- Harm to human health
- Harm to nocturnal wildlife and ecosystems
- Reduced safety and security
- Reduced visibility at night
- Poor nighttime ambience

2. Raise awareness about light pollution, its adverse effects, and its solutions

3. Educate everyone, everywhere, about the values of quality outdoor lighting

4. Help stop other threats to our view of the universe, such as radio frequency interference (RFI) and space debris

To achieve these goals, IDA takes an award-winning unified approach that supports the individual efforts of our members and of others who advocate dark skies. In fighting light pollution we work with communities, astronomers, ecologists, and lighting professionals; we are active on local, national, and international stages. We have already accomplished much, but our work is not yet done. With your support, in time we will succeed in conserving, preserving, and restoring our natural dark skies.

Join & help Support a truly worthy Goal!

International Dark-Sky Association (IDA)
3225 North First Avenue
Tucson, Arizona 85719
United States
Telephone: 520-293-3198
Fax: 520-293-3192

<http://www.darksky.org/>

A Missile in Your Eye

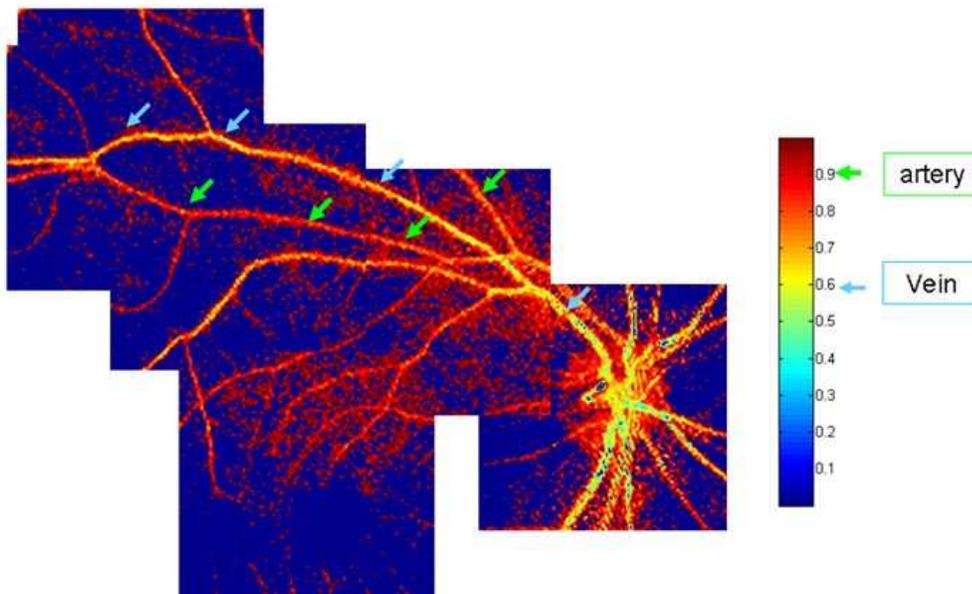
by Patrick L. Barry

Satellite technology designed to catch ballistic missile launches may soon help doctors monitor the health of people's eyes.

For the last 15 years, Greg Bearman and his colleagues at JPL have been working on a novel design for a spectrometer, a special kind of camera often used on satellites and spacecraft. Rather than snapping a simple picture, spectrometers measure the spectrum of wavelengths in the light coming from a scene. From that information, scientists can learn things about the physical properties of objects in the photo, be they stars or distant planets or vegetation on Earth's surface.

In this case, however, the challenge was to capture snapshots of short-lived events—like missile launches! The team of JPL scientists designed the new spectrometer, called a computed tomographic imaging spectrometer (CTIS), in collaboration with the Ballistic Missile Defense Organization as a way to detect missiles by the spectral signatures of their exhaust.

But now the scientists are pointing CTIS at another fast-moving scene: the retina of an eye.



This three-color composite image from the computed tomographic imaging spectrometer shows the oxygenation of the blood in the arteries and veins of a human retina. (Arteries appear red, veins appear yellow.)

Blood flowing through the retina has a different spectral signature when it is rich in oxygen than when it is oxygen deprived. So eye doctors can use a spectrometer to look for low oxygen in the retina—an indicator of disease. However, because the eye is constantly moving, images produced by conventional spectrometers would have motion blurring that is difficult to correct.

The spectrometer that Bearman helped to develop is different: It can capture the whole retina and its spectral information in a single snapshot as quick as 3 milliseconds. "We needed something fast," says Bearman, and this spectrometer is "missile-quick."

CTIS is even relatively cheap to build, consisting of standard camera lenses and a custom, etched, transparent sheet called a grating. "With the exception of the grating, we bought everything on Amazon," he says.

The grating was custom-designed at JPL. It has a pattern of microscopic steps on its surface that split incoming light into 25 separate images arranged in a 5 by 5 grid. The center image in the grid shows the scene undistorted, but colors in the surrounding images are slightly "smeared" apart, as if the light had passed through a prism. This separation of colors reveals the light's spectrum for each pixel in the image.

"We're conducting clinical trials now," says Bearman. If all goes well, anti-missile technology may soon be catching eye problems before they have a chance to get off the ground.

Information about other NASA-developed technologies with spin-off applications can be found at <http://www.sti.nasa.gov/tto>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Eugene Astronomical Society
Elections
October 1, 2007

Jacob Strandlien, Sam Pitts and Tony Dandurand were nominated at our September meeting. Jacob & Sam are seeking to continue on the board with another two year term while Tony is seeking to fill the 3rd position that is open on the board. Jerry Oltion & Tommy Lightning Bolt remain on the board, with one year left of their two year term. We will vote for these candidates at the end of presentations during our October meeting.

Club Membership Dues expire in October

Bring \$ 25.00 to the October Meeting and renew your membership

EAS will accept donations which may be tax deductible, so feel free to donate.

[See Jerry Oltion to pay your dues and receive your 2008 EAS Membership Card.](#)

Science Factory Children's Museum & Planetarium

2300 Leo Harris Parkway, Eugene
SW of Autzen Stadium

Sue Peterson (planetarium director) & Executive Director of the Science Factory Joyce Berman are seeking volunteers to assist them in fund raising activities.

Please contact them if you have some time to share in their fundraising activities.

Sue is also looking for volunteers to learn how to operate and put on programs in the planetarium.

Contact Sue at: 541-682-7891

Contact Joyce at: (541)682-7888