

Night Visions

Newsletter of the Baton Rouge Astronomical Society

November 2009

**THE NEXT MEETING OF THE
BATON ROUGE ASTRONOMICAL SOCIETY
WILL BE NOVEMBER 9, 2009
AT 7 P.M.**

PROGRAM NOTES: Better Lighting for Baton Rouge
LIGHT CONTROL/ EFFICIENT LIGHTING OPEN HOUSE IN NOVEMBER

The November meeting (on the 9th) will be used as an opportunity to network with other groups in town with a vested interest in more efficient artificial lighting of the metro area.

There will be a brief talk at 7pm to introduce ourselves and air our concerns from an amateur astronomy viewpoint. The visitors will then mill from table to table, with each table highlighting a different concern about unshielded lights. HRPO will pay for refreshments, and we should of course have at least one of the large scopes open.

Hopefully, the major outcome of such networking will be an exchange of suggestions on how to ask for shielded streetlamps, security lights and gas station islands. Suggestions can be made at this coming meeting.

Ideas for future BRAS meeting topics, contact-

Marvin E Owen, Attorney-CPA

marvin@meocpa.com

3036 Brakley Drive

Baton Rouge, La 70816

ph 225-292-0099

FAX 225-296-5780

EDITOR'S NOTE:

Marvin Owen will continue to surveying members about their willingness to receive the newsletter via e-mail. Those of you willing to help the club in the saving of postage and paper should contact Marvin. For your convenience our current mailing list is within this newsletter. Please check that email address is correct. Please notify Marvin if we do not show a correct e-mailing address. Also check the mailing address and let us know if it is incorrect. For the next several months we will still send out the newsletter by US postal service has a backup. Craig Ed.

**REMINDER - THE CLUB STILL HAS TWO 2010
CALENDARS LEFT. MEMBERS CAN PURCHASE
THESE CALENDARS FOR \$10 EACH.**

MARVIN E OWEN
Attorney at Law
Certified Public Accountant

3036 Brakley Drive
Baton Rouge, Louisiana 70816

Telephone
225-292-0099
FAX 296-5780

www.meocpa.com
marvin@meocpa.com

MEMBER
American Bar Association
Louisiana State Bar Assn
American Institute of CPA's
Society of La CPA's

September 1, 2009

Mayor Kip Holden
222 St Louis Street, 3rd Floor
Baton Rouge, La 70802

re: American Medical Assn new stand
on Wasted Energy and Light Pollution

Dear Mayor Holden

I have advocated to you in the past the need for reduced and/or more efficient lighting at night in Baton Rouge. The excess and inefficient lighting is costing our city thousands of dollars more than is necessary for basic lighting. In addition, the glare at night from many of the lights makes driving a chore rather than an enjoyable ride.

The American Medical Association (AMA) has now issued a resolution #516 that opposes excess and inefficient lighting in our cities and towns. I believe that it is high time for Baton Rouge to become a leader in reducing excess energy costs and wasted lighting that results in light pollution. I have attached a printout of the AMA resolution and it can be verified at pages 52 and 53 on the AMA website at <http://www.ama-assn.org/ama1/pub/upload/mm/475/refcome.pdf>.

I suggest that you support and that the Council pass an ordinance requiring more efficient and reduced nighttime lighting in this time of economic and energy crunch. It is time for Baton Rouge to become more "green" in this area.

Sincerely,



Marvin E. Owen

HRPO FRIDAY NIGHT LECTURE SERIES

6 November: "Nanostructures!"

The second in the CAMD talks takes the audience into a world all around us yet hardly noticed. Our modern society depends on ever improving micro- and nanotechnology products in all aspects of our daily life. Jost Goettert, associate professor at CAMD, will briefly talk about how to make small structures and then focus on the aspect of "seeing small things" down to the atomic level.

13 November: "Apollo Twelve 40th Anniversary"

31 hours and 31 minutes on the Moon! "Pete" Conrad and Alan Bean were the third and fourth men to walk on the Moon, performing two surface EVAs in the Ocean of Storms while Richard Gordon orbited above. The history continues with this Apollo series presented by HRPO Center Supervisor Tom Northrop.

20 November: "WISE to the Skies"

Do we really know all of the nearest stars to the Sun? Do we really know about all of the large asteroids? WISE's amazing infrared, all-sky survey will give human beings a view of the Solar System and the Universe previously unimaginable!

27 November: {TBA}

LSU PHYSICS COLLOQUIA

All at 3:40pm in Nicholson 109

5 November: "Creating a Star in the Laboratory"

Richard Boyd of Lawrence Livermore National Laboratory

12 November: {TBA}

Joerg Schmalian of Iowa State University and Ames Laboratory

19 November: "Magnetic Moments in Superconductors"

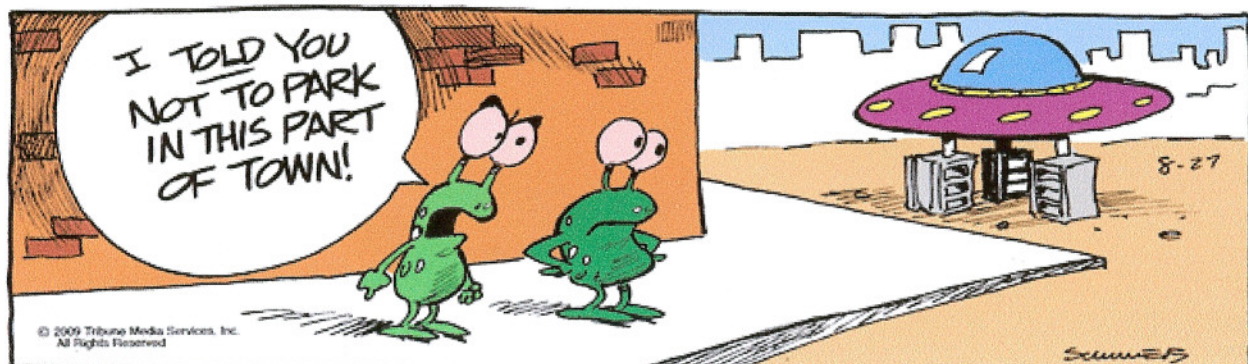
Jeffrey Lynn of National Institutes of Standards and Technology

MESSAGE FROM HRPO

Marvin Owen, Ben Toman and I went to the Dava Sobel talk at the LASM the afternoon of the 1st. Ms. Sobel was very informative and nice. Marvin and Ben had their copies of *Galileo's Daughter* signed. Mine had to be back-ordered!

As of the 19th, the exoplanet list is over 400 thanks to the HARPS instrument. A group of European astronomers publicized a list of 30 new exoplanets and two brown dwarfs.

Thanks, Christopher



BRAS Stargaze Dark Sky Site Viewing Dates

November 14th 2009 Primary

November 21st 2009 Secondary

Constellation of the Month

Pegasus: The Winged Horse

Pegasus was the winged horse of Greek mythology with a very strange manner of birth. Its mother was Medusa, the Gorgon and its father was Poseidon, who is god of both the sea and of horses. Pegasus was conceived in the temple of Athene which enraged the goddess so that she changed Medusa into a snake-haired monster whose gaze could turn men into stone. Eventually Perseus confronted and slew Medusa by decapitation at which time Pegasus, the famed winged horse, sprang fourth from her headless body.

The Greek hero Bellerophon, after using Pegasus to slay a monster, attempted to fly up and join the gods on Olympus. Before he got there he fell back to Earth; but Pegasus completed the trip and Zeus used him for a while to carry his thunder and lightning. Zeus later put Pegasus among the constellations.

Position in the Sky

Right Ascension: 22 hours

Declination: 20 degrees

Named Stars

MARKAB (Alpha Peg), SCHEAT (Beta Peg), ALGENIB (Gamma Peg), ENIF (Epsilon Peg), Homam (Zeta Peg), Matar (Eta Peg), Baham (Theta Peg), Salm (Tau Peg)

Deep Sky Objects

M15 (globular cluster)

Interesting Stars in Pegasus

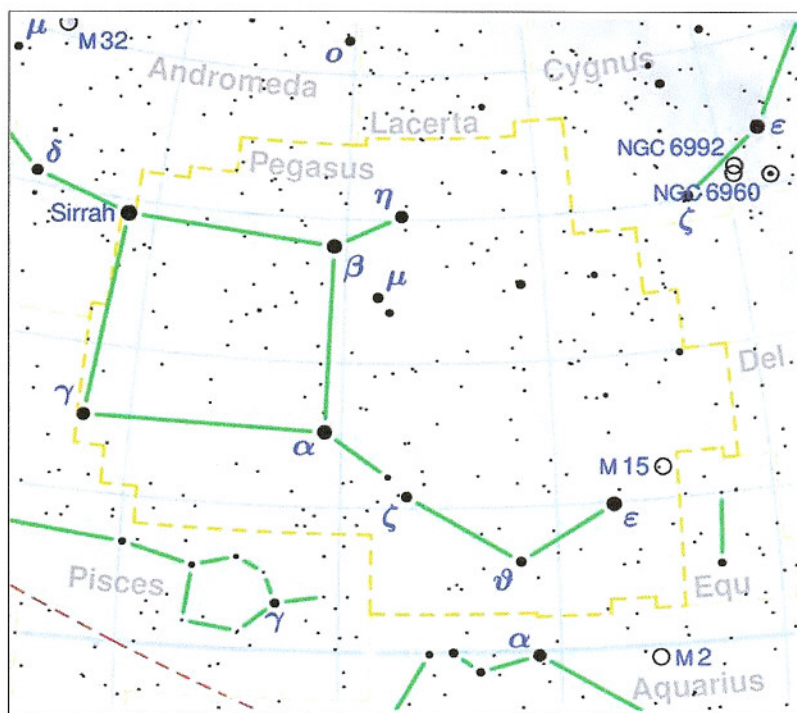
Four bright stars α Peg, β Peg, and γ Peg, together with Sirrah form the famous Square of Pegasus. 51 Pegasi, is the first Sun-like star known to have an extra solar planet. IK Pegasi is the nearest supernova candidate. Spectroscopic analysis of HD 209458 b, an extra solar planet in this constellation has provided the first evidence of atmospheric water vapor beyond the solar system, while extrasolar planets orbiting the star HR 8799 also in Pegasus are the first to be directly imaged.

For more information check out the BRAS website at <http://www.bro.lsu.edu/bras/>

Art Barrios

BRAS Observing Chairman

art.barrios@cox.net



The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

Sky Calendar – November 2009

- 1 Mars 0.23° NNE from center of Beehive cluster (M44) (92° from Sun, morning sky) at 15h UT. Mag. +0.4.
- 2 Full Moon at 19:14 UT.
- 3 Venus 3.5° NNE from Spica (17° from Sun, morning sky) at 5h UT. Mags. -3.9 and +1.0.
- 4 Moon near the Pleiades (morning sky) at 5h UT.
- 5 Taurid (south) meteor shower peaks. Active between 25 Sept and 25 Nov. Associated with Comet 2P/Encke.
- 5 Mercury at superior conjunction with the Sun at 8h UT. The planet passes into the evening sky.
- 7 Moon at perigee (closest to Earth) at 7h UT (368,903 km; 32.9').
- 8 Moon near Beehive cluster (M44) (99° from Sun, morning sky) at 23h UT.
- 9 Moon near Mars (morning sky) at 14h UT. Mag. +0.3.
- 9 Last Quarter Moon at 15:56 UT.
- 10 Moon near Regulus (morning sky) at 13h UT.
- 12 Taurid (north) meteor shower peaks. May produce the occasional bright fireball.
- 12 Moon near Saturn (morning sky) at 20h UT. Mag. +1.1.
- 14 Moon near Spica (morning sky) at 12h UT.
- 16 New Moon at 19:13 UT. Start of lunation 1075.
- 17 Leonid meteor shower peaks at 9h UT. Arises from debris ejected by Comet Tempel-Tuttle in 1533. Expect about 25 to 30 meteors per hour under dark skies. Predictions of enhanced activity between 21–22h UT on 17 Nov (favours sky watchers in Asia).
- 21 Alpha Monocerotid meteor shower peaks at 15:25 UT. A usually minor shower active 15–25 Nov. Radiant is near Procyon. Predictions of enhanced activity this year. Timing favours Far East Asia, Australia and across the Pacific to Alaska.
- 22 Moon at apogee (farthest from Earth) at 20h UT (distance 404,733 km; angular size 29.7').
- 23 Moon near Jupiter (evening sky) at 19h UT. Mag. -2.3.
- 24 First Quarter Moon at 21:38 UT.

More sky events and links at <http://Skymaps.com/skycalendar/>

All times in Universal Time (UT). (USA Eastern Standard Time = UT - 5 hours.)



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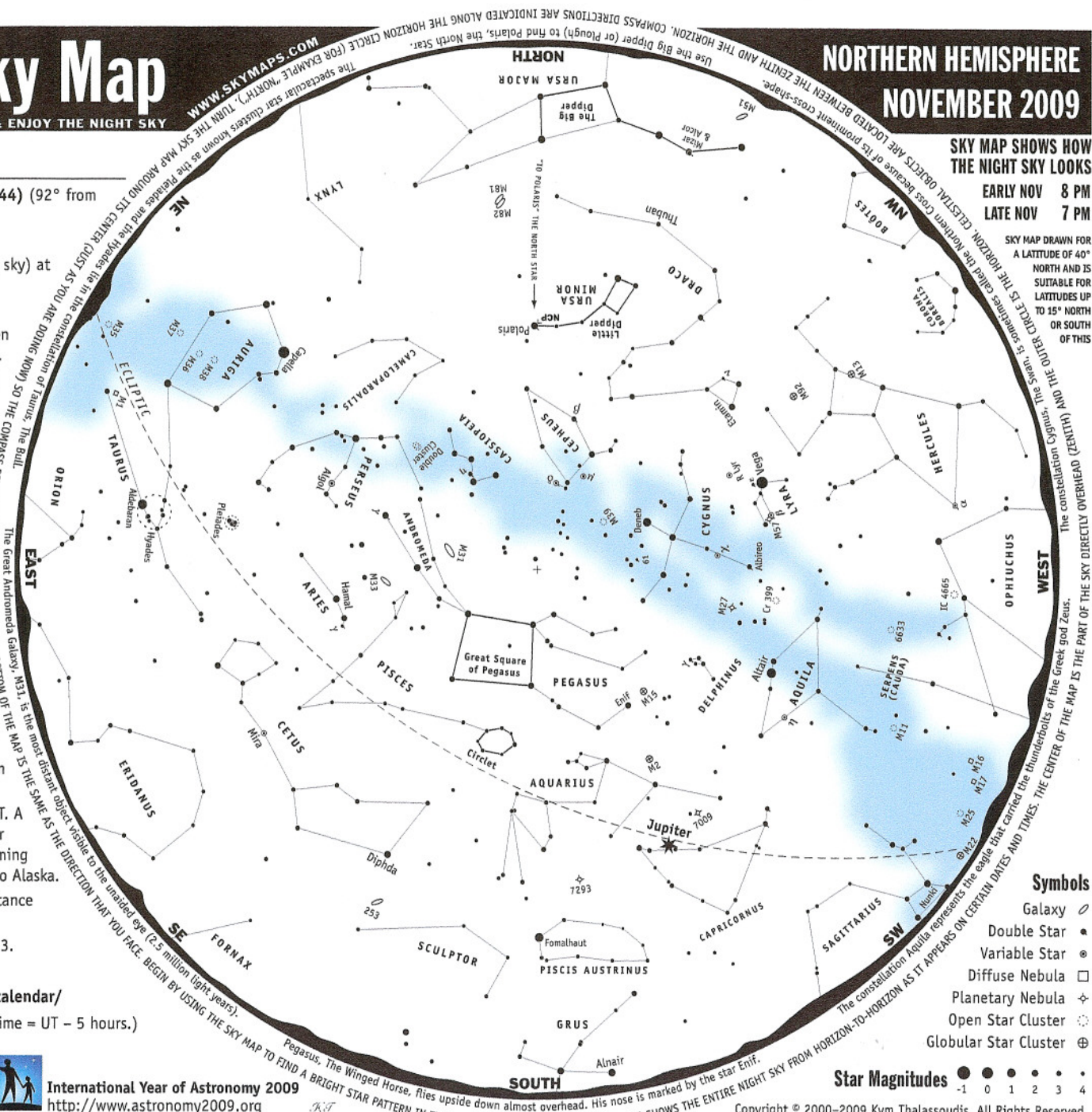
International Year of Astronomy 2009
<http://www.astronomy2009.org>

NORTHERN HEMISPHERE NOVEMBER 2009

SKY MAP SHOWS HOW
THE NIGHT SKY LOOKS

EARLY NOV 8 PM
LATE NOV 7 PM

SKY MAP DRAWN FOR
A LATITUDE OF 40°
NORTH AND IS
SUITABLE FOR
LATITUDES UP
TO 15° NORTH
OR SOUTH
OF THIS



Symbols

- Galaxy
- Double Star
- Variable Star
- Diffuse Nebula
- Planetary Nebula
- Open Star Cluster
- Globular Star Cluster

Star Magnitudes

-1 0 1 2 3 4

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THE FADING MILKY WAY

Cosmologists speculate that 10^{14} years from now (a mind-boggling stretch) the stars in our relentlessly expanding Universe could run out of fuel and fade from view. The night sky, once the TV set of ancient peoples, will become dull and boring: a blank tableau with no stars or nebulae. Sounds like an astronomer's nightmare!

Fortunately, the stars themselves won't go out for a very long time. But researchers say the night sky is already fading. A recent study revealed that perhaps two-thirds of the world's population can no longer look upwards at night and see the Milky Way—a hazy swath of stars that on warm summer nights spans the sky from horizon to horizon.

The Milky Way is dimming, not because the end of the Universe is near, but rather as a result of light pollution: the inadvertent illumination of the atmosphere from street lights, outdoor advertising, homes, schools, airports and other sources. Every night billions of bulbs send their energy skyward where microscopic bits of matter -- air molecules, airborne dust, and water vapor droplets -- reflect much of the wasted light back to Earth.

It's hard to imagine that the incandescent electric lamp was invented little more than 100 years ago," says George Eslinger, former Director of the Los Angeles City Bureau of Street Lighting. "Since then urbanization and poorly controlled lighting has created a severe light pollution problem in industrialized countries."

"If we don't reverse this trend," he cautions, "the entire globe will soon be wrapped in a glowing envelope through which none of the magic of the Universe can be seen by the naked eye."

City dwellers have already lost most of the constellations, the planet Saturn, and a host of medium magnitude stars. They can forget about observing most meteor showers, too, or faint displays of Northern Lights. It's a big loss. Young sky watchers grow up to be philosophers, scientists, poets, explorers, and school teachers. But kids aren't likely to watch—or be inspired by—a blank sky.

Timothy Ferris, author of ten best-selling books on astronomy and the cosmos, and featured scientist in the PBS special *The Creation of the Universe* agrees, "The loss of the night sky is most troubling for children. Whole generations of kids in cities and suburbs are growing up seldom if ever having seen the Milky Way and what a sky full of thousands of stars might look like."

"People often describe to me in glowing terms their experience in viewing the night time sky as if they'd seen something extraordinarily exotic... something akin to observing Victoria Falls or the South Pole. And I'm afraid that's the case for many people...that they can count on the fingers of one hand the times they've seen a good night's sky."

That's a shame because most humans seem to have a deep-seated interest in astronomy -- a longing to stare at the stars and learn about the heavens. It's what professional astronomers call, fancifully, our astronomy "gene".

Says Ferris: "All human cultures—no matter how primitive—have felt it important to tell stories about the stars and about the nature and the origin of the Universe as a whole. So there's something about astronomy that is deeply engrained in human culture, going as far back as music, dance and poetry."

That ancient call from the stars is one reason why modern folk visit planetaria. But can such exhibits replace the real night sky? "No way," says Marshall Space Flight Center astronomer Mitzi Adams. "Even the best planetaria cannot demonstrate the true scale of the night sky. I remember when I worked at the Fernbank Science Center's planetarium in Atlanta: I was exposed to the planetarium's artificial sky many times a day. One week the weather in Atlanta was bad and I hadn't seen the 'real' sky for a while. Finally one evening the clouds parted and I walked outside. I was *astounded* by the size and beauty of Orion. It was the real thing and I could tell the difference."

Adams could see Orion from Atlanta because it is one of the brightest constellations. But even brilliant Orion will eventually fade if poorly-designed lights proliferate. Fortunately, light pollution *is* reversible. In recent years engineers have developed more efficient bulbs with "sky friendly" fixtures that can preserve dark skies and decrease energy costs.

"Consider home security lights," continues George Eslinger. "The \$19.95 variety often put more light into the air than they do on the ground. But by using the proper fixture, properly aimed, we can eliminate glare, eliminate shadows against buildings where 'bad guys' can avoid detection ... and do it all with less energy."

Exterior home lighting is a primary source of light pollution in some areas, but not all, adds Eslinger. Street lamps, sports fields, billboards and parking lots—even prison lights—can be the biggest offenders. "The sources of light pollution are as varied as each community or region," he says.

--Tony Phillips and Doug Hullander, NASA (1 November 2001)