

Houston Astronomical Society



GuideStar

September, 2009

At the September 4 meeting...

The New Cosmology

--recent revelations about the origin and evolution of the universe

Reggie Dufour, Ph.D, Rice University

Our generation has been blessed to see revolutionary discoveries about the nature and history of the universe. First was the discovery in the 1950's of invisible "dark matter" governing the motion of our Galaxy and others. Then came the discovery in the 1960's of the radiation left over from the Big Bang explosion: the Cosmic Background Radiation (CBR) at microwave wavelengths. Next (in the late 1990's) came the discovery that the universe began to accelerate a few billion years ago due to a mysterious "dark energy." Finally, in only this decade, detailed mapping of the CBR and computer modeling permitted the development of "precision cosmology" --whereby we were able to fix the age of the universe at 13.7 billion years and understand the details of the evolution of stars and galaxies since.

Dr. Reginald J. Dufour is Professor of Astrophysics at Rice University and has been studying the evolution of stars and galaxies and for the past 35 years using telescopes at the major observatories on the earth and in space

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HAS Web Page:

<http://www.AstronomyHouston.org>

See the *GuideStar's* Monthly Calendar of Events to confirm dates and times of all events for the month, and check the Web Page for any last minute changes.

Schedule of meeting activities:

All meetings are at the University of Houston Science and Research building. See the inside back cover for a map to the location.

Novice meeting: 7:00 p.m.
*Epsilon Aurigae - Mystery and Opportunity --
Bill Pellerin*

Site orientation meeting: 7:00 p.m.
Classroom 121

General meeting: 8:00 p.m.
Room 117

See last page for a map and more information.

The Houston Astronomical Society

The Houston Astronomical Society is a non-profit corporation organized under section 501 (C) 3 of the Internal Revenue Code. The Society was formed for education and scientific purposes. All contributions and gifts are deductible for federal income tax purposes. General membership meetings are open to the public and attendance is encouraged.

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 Rice U. Coord..... Matt Delevoryas713-666-9428
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 Texas Star Pty Steve Goldberg713-721-5077

Special Interest Groups & Help Committees

These are now listed on the inside of *GuideStar* (not every month). See the Table of Contents

Advisors

Dr. Reginald DuFour, Rice Univ.
 Dr. Lawrence Pinsky, U. of H.
 Dr. Lawrence Armendarez, U. of St. Thomas

Dues and Membership Information

Annual Dues:Regular\$36.00
 Associate\$6.00
 Sustaining\$50.00
 Student\$12.00
 Honorary None

All members have the right to participate in Society functions and to use the Observatory Site. Regular and Student Members receive a subscription to *The Reflector*. Regular, Student, and Honorary Members receive *The GuideStar*. Associate Members, immediate family members of a Regular Member, have all membership rights, but do not receive publications. Sustaining members have the same rights as regular members with the additional dues treated as a donation to the Society. *Sky & Telescope* and *Astronomy* magazines are available to members at a discount.

Membership Application: Send funds to address shown on outside cover of *GuideStar*. Attention - Treasurer, along with the following information: Name, Address, Phone Number, Special Interests in Astronomy, Do you own a Telescope? (If so, what kind?), and where you first heard of H.A.S.

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Special Interest Group Listing

Any member who wants specific information on a SIG listed below may call the listed individual. Also, see the "Ad Hoc Committee Chairpersons" on the inside front cover and the "Special Help Volunteers" listing (not in every issue).

Advanced..... Bill Leach.....281-893-4057
 Comets Don Pearce713-432-0734
 Lunar & Planetary..... John Blubaugh713-921-4275

Other Meetings...

Fort Bend Astronomy Club meets the third Friday of the month at 8:00 p.m. at the First Colony conference Center. Novice meeting begins at 7:00, regular meeting begins at 8:00. Web site: <http://www.fbac.org>

Johnson Space Center Astronomical Society meets in the the Lunar and Planetary Institute on the 2nd Friday of each month. Web site: www.jscas.net

North Houston Astronomy Club meets at 7:30 p.m. on the 4th Friday of each month in the Teaching Theatre of the Student Center at Kingwood College. Call 281-312-1650 or E-mail bill.leach@nhmccd.edu. Web site: www.astronomyclub.org

September / October Calendar:



Photo by Scott Mitchell

Check the web site:
www.astronomyhouston.org
Webmaster: Kay McCallum
kaym@mcclibrary.net

The Houston Astronomical Society Web page has information on the society, its resources, and meeting information.

Want your astronomy work and name on the Internet for the whole world to see? Have some neat equipment? Pictures in film, CCD, hand drawings or video format are all welcome on the page. Do you have an idea to improve the page? I'm listening. Send me Email at kaym@mcclibrary.net.

Date	Time	Event
September		
4	11:03 a.m.	Full Moon
	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
12	9:16 p.m.	Moon at last quarter
17	5:00 a.m.	Uranus at Opposition
18	1:43 p.m.	New Moon
19		HAS Picnic/All Clubs/BBQ, Columbus Observing Site
		Prime Night, Columbus Observing Site
22	4:22 p.m.	Autumn Equinox
25	11:48 p.m.	Moon at first quarter
30	7:30 p.m.	HAS Board of Directors Meeting Houston Chronicle Building, Downtown Houston

Date	Time	Event
October		
2	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
4	1:11 a.m.	Full (Harvest) Moon
6	morning	Mercury at greatest western elongation (visible in morning sky)
11	3:56 a.m.	Moon at last quarter
18	0:32 a.m.	New Moon
23	evening	All clubs astronomy meeting see www.astronomyday.org
24	day + evening	Astronomy Day - George Observatory
25	7:41 p.m.	Moon at first quarter

Send calendar events to Doug McCormick
 - skygazer10@sbcglobal.net

Columbus Field Trips 2009

Mike Edstrom
 Field trip/Observing committee chair

The schedule is as follows:

- September 19 - Annual picnic / all clubs/BBQ
- October 17 - All clubs BBQ
- December 19 – HAS Observing

★ ★ ★ ★ ★

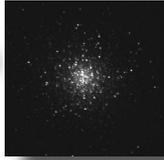
**GuideStar deadline
for the October
issue
is September 15**

★ ★ ★ ★ ★



Observations... of the editor

by Bill Pellerin, GuideStar Editor



Board of Directors Meeting September 30

Second reminder... If you have any issues for the board (you don't have to be a board member to attend), bring them to this meeting. See the details on the calendar page.

Epsilon Aurigae - Mystery and Opportunity

Eclipsing binary star Epsilon Aurigae will go into eclipse this year and will drop from magnitude 3.0 to magnitude 3.8. Watching this star is a project of the AAVSO and the Citizen Sky organization.

In early August I attended a workshop on the science (the mystery) and plans for engaging the public in making observations of the eclipse (the opportunity). I'll be talking about this program and the plans at our September meeting (Novice session). The opportunity for you is to become an observer of Epsilon Aur, to become a data analyst, or to become a spokesperson.

I'll also be talking about this at the Astronomy Day event (outside, so no projectors). Yesterday morning (8/24/2009) I went outside early and estimated the magnitude of Eps Aur using small binoculars. Capella is easy to spot and it's only a short hop from there to Epsilon. On September 15, at 5:45 a.m., Eps Aur will be at azimuth 38 degrees (northwest) and altitude (above the horizon) 71 degrees. (Rise time for Eps Aur on that date is 10:30 p.m., so if you want to stay up late you can make your observations then as well.)

If you want more information now, go to www.citizensky.org. If you want to submit your observations, or get a certificate for completing the 10-star tutorial, sign up.



Epsilon Aurigae and comparison stars. Decimal points are removed.

Credit: AAVSO

Map: TheSky X Serious Astronomer

On the slope of the learning curve

One of the great things about amateur astronomy is that there is always something new to learn. If you're not learning about some new observing technique, or about astronomical imaging, you can learn about astrophysics or about some object (or set of objects) of interest. You can develop knowledge on stellar evolution, cosmology, planets, clusters, galaxies, planetary nebulae, and so on.

We are obliged to spend some of our time learning how to use the equipment we have, and practicing our skills at using the equipment. There's no end to it, so we're always on the slope of the learning curve, and that's the way it should be.

This process is part of the enjoyment of amateur astronomy. There are always new things to learn and new things to try.

Keep after it.

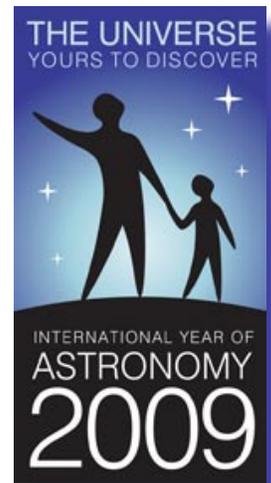
All Clubs Mtg / Astronomy Day

Start planning now to participate in the regional all-clubs meeting on October 23 and volunteering for Astronomy Day on October 24. Both of these events are a lot of fun. Get ready.

Until next time...

clear skies and new moons!

..Bill





Glenn Chapel - Variable Star Observer

One of the astronomy passions that I immerse myself in is “arm-chair astronomy”. I subscribe to all three major magazines; *Astronomy*, *Sky & Telescope*, and *Astronomy Technology Today*. Last year I interviewed Sue French from *S&T* here in my column. I always enjoy chatting (as you know) to the different folks out there in astronomy-land.



Glenn Chapel, author of “Telescope Basics”

This month, I’m very happy to introduce you to Glenn Chapel, a column writer at *Astronomy* magazine. I always read his articles and savor every word he types... it’s always interesting and I seem to always learn from him. His monthly column is titled, “Observing Basics”. If you haven’t thumbed through *Astronomy* and found his article....Do it!!

You’re going to enjoy this month’s interview. Glenn has lots to say;

enjoy our talk...

The Glenn Chapel Bio...

Glenn Chapel has been an avid amateur astronomer since the summer of 1963 when a high school friend showed him Saturn with a small reflecting telescope. His astronomical writings have appeared in *Deep Sky Magazine* and *Odyssey*, and he currently writes the “Observing Basics” column for *Astronomy*. He is co-author with Terence Dickinson and Victor Costanzo of the *Edmund Scientific Mag 6 Atlas*, and author of the book *Exploring With a Telescope*.

Over the years, Glenn has observed a variety of space objects, and is particularly fond of small-telescope astronomy. With a 3-inch f/10 Edmund Scientific reflector, he has seen all of the planets, two dozen comets, and over 100 asteroids. With this same

telescope, he notched all of the Messier objects and some 1500 double and multiple stars.

In 1980, Glenn joined the American Association of Variable Star Observers. Since then, he has submitted over 70,000 variable star estimates to the AAVSO. The earliest of these came with his 3-inch reflector. He now does most of his variable star work with a 13-inch Dobsonian-mounted reflector.

Besides astronomy, Glenn enjoys distance running and fishing. He lives in north central Massachusetts with his wife Regina and is the proud parent of two grown sons and “grampy” to two future astronomers – Katie and Sam.

The Glenn Chapel interview...

Clayton: It is wonderful to discuss astronomy with you here Glenn. I have a question or two here for you that I know you will enjoy discussing with our readers.

It seems you have performed thousands of hours observing through a small reflecting telescope in the years past. Is this the design of choice for variable stars?

Glenn: Actually, anything will work for making brightness estimates of variable stars. I use the naked eye for variables brighter than 5th magnitude. Binoculars are my instrument of choice for variables in the magnitude 5 to 8 range. When moving up to telescopes, I like to choose one with a low f-ratio, because its wide field will encompass more comparison stars. A small-aperture rich-field telescope will handle variables between 7 and 11, while my largest telescope, a 13-inch f/4.5 Dob will get variables as faint as 15th magnitude.

Clayton: The Edmund Scientific Mag 6 atlas is a great observing tool. How do you compare it to Norton’s?

Continued ...

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Glenn: I'm kinda prejudiced here, since I was a co-author of the Mag 6. That being said, I would liken the Mag 6 to a Ford and Norton's to a Lexus. The Mag 6 is inexpensive and provides the basics. It's a good choice for the novice. Norton's costs more, but includes a larger amount of text – something an intermediate to advanced observer would appreciate. When in doubt, get 'em both!

Clayton: 70,000 variable star estimates with the AAVSO! Mercy sakes! You have been busy. Why the desire to observe these objects? Where does all this passion come from?

Glenn: What I like about variable stars is their dynamic nature. While deep-space objects remain relatively unchanged, a variable star, as the name implies, is constantly changing. As the noted comet hunter/variable star observer Leslie Peltier once noted, "A variable star is something happening." When I go outside to observe variable stars, I do so with a sense of anticipation, as I never know what each is up to.

Variable stars are addictive. An example is the dwarf nova, a cataclysmic variable typified by SS Cygni. Each is actually a close binary system whose interactions cause an occasional nova-like flare-up. Night after night, a cataclysmic variable will be at its quiescent, or "down" stage. Then one night you go out, and there it is, shining several magnitudes brighter. SS Cyg typically shines at 12th magnitude. At outburst, it jumps up in a day or so to 8th mag. Like the gambler who goes to the slot machine thinking this time he or she will hit the jackpot, I go outside thinking this is the night that SS Cyg or any other of the dozens of dwarf novae I monitor will be "up," allowing me to hit a cosmic jackpot.

By the way, variable star observing is real science. There are too many variable stars and not enough professional astronomers to keep track of them. Members of the AAVSO - hundreds of them worldwide - keep a watch on variable stars, reporting their activity to the AAVSO, which forwards the information to professional astronomers. Once, I caught the dwarf nova U Geminorum in the beginning stage of an outburst. I reported it to the AAVSO which, in turn notified a group of astronomers who planned to use the Hubble Space Telescope to view the event. Later, I received a thank-you letter from one of the astronomers. Now that's a reward for doing something I enjoy!

Clayton: Talk us through a typical observing session while at work on these variable stars. I'm sure you have your own personal method of observing and recording the data while at your scope.

Glenn: I go outside with a three-ring binder containing charts for each variable star I intend to observe, along with a clipboard that holds a data sheet. Each chart shows the location of the variable and indicates the magnitudes of nearby comparison

stars. As I observe each variable, I estimate its magnitude, then write it down on my data sheet, along with the star's identification and the date and time of the observation. At the end of the session, I go to my computer, type in the data, and forward everything to the AAVSO.

When I started out, it would take 10 to 15 minutes to make a variable star estimate, from finding the variable (in my case by star-hopping) to looking over the comparison stars, to making an estimate I felt confident in. As time went on, I began to memorize the location of each variable (not difficult when you visit them time after time) and the magnitudes of nearby comparison stars. I also developed a confidence in the accuracy of my estimates. As a result, I can now make a variable star estimate in less than a minute, which allows me to cover dozens of variables in an hour or two.

Clayton: You now have a 13" Dob; think you'll go larger? Ever ponder the purchase of a SCT?

Glenn: The 13-inch is about as big as I'll go. I live in a heavily wooded area, which necessitates portability as I have to move from one part of the yard to another to reach as much of the sky as I can. The 13-inch strains the muscles as I move it around. In fact, I've recently been working with a 10-inch f/5 Dob. It's much easier to transport, and I don't have to gulp Advil at the end of the session.

As for a SCT, I have a 5-inch Maksutov-Cassegrain, which I use for high-power observing of the moon, planets and double stars. My telescope menagerie includes 4 reflecting telescopes, 4 refractors, and the aforementioned SCT. Like golf clubs, no single telescope can do it all (although I must admit, 9 telescopes is a bit of an overkill).

Clayton: I'm now starting to get concerned about the lack of children/young people

Continued ...

Just Looking... from previous page

that are interested in astronomy. Is this a misconception of mine? Got any ideas on how to raise their curiosity?

Glenn: It's not a misconception, and I hear it discussed a lot at astronomy gatherings, both club meetings and conventions. We refer to it as "the aging of astronomy." A prime reason, I believe, is the popularity of the computer and video games, both of which attract youngsters and occupy an inordinate portion of their time and interest. How do we combat this trend? The best way I can think of is to conduct star parties at local schools – especially at the grade 3 or 4 level – an age when youngsters are still open to new activities.

By the way, don't give up on the older set! I was an 8th grade science teacher (now retired) who used to teach a unit on astronomy. As enthusiastic as I was about the topic, I just couldn't reach "Mike," a boy who preferred acting out in class in order to impress the girls. 15 years later, I got an email from Mike, now a 20-something adult who had come across my column in *Astronomy*. He's an avid amateur astronomer and a member of his local astronomy club. "Back then", he relates, "I was fascinated by astronomy, but didn't want to show it for fear of being labeled a geek." Nowadays, with geeks often being portrayed in a positive light in Hollywood movies, teenagers are less afraid to openly exhibit a fascination for astronomy. A star party for a high school science class may not be a waste of time. So don't give up – a new generation of amateur astronomers is waiting in the wings.

Clayton: How did you become involved in writing for *Astronomy* magazine?

Glenn: Wow! It's a long story, so here's the condensed version. My earliest writings date back to the late 70s and a modest little publication called *Deep Sky Monthly*. I had sent the editor a sample of my writing, along with a proposal for a column on double stars. He liked my work, and invited me to join DSM as a contributing columnist. I almost turned down him down when I learned that he was a wet-behind-the-ears high school junior. I decided to stay, rather than bail out on the youngster. A few years later, I began a small-telescope column for the ill-fated magazine *Star and Sky*. From there I moved on to the children's astronomy magazine *Odyssey* - all while still contributing to *Deep Sky*. Fast forward to late 2002. The editor-in-chief at *Astronomy* asked me if I'd like to author a beginner's column for the magazine. Of course, I said YES! By the way, the editor's name was David Eicher, none other than that one-time 17-year-old kid who had invited me to write for *Deep Sky Monthly*. I often wonder how things would have turned out had I declined his invitation.

Clayton: Do you have an amateur observing mentor?

Glenn: Not now, although I'm not afraid to seek the advice of a member of my astronomy club, the Amateur Telescope Mak-

ers of Boston, when I need information on an aspect of astronomy that's unfamiliar to me.

As for my start in astronomy, I always point to my high school friend Ray Gerbi, who took me outside with his telescope on a summer evening in 1963 (yes, I'm that old!) That evening, Ray taught me the major summer stars and constellations, then showed me Saturn, the double star Mizar, and M13 and M31. I was hooked! Ray continued to work with me in the months ahead, and eventually lent me his telescope when he thought it was time for me to fly solo. We all need to be "Ray Gerbis" to get others involved in a great hobby.

Clayton: Have you a favorite star party that you attend regularly? Are there others?

Glenn: I've attended a number of star parties in the northeast U. S., particularly the Stellafane Convention in Vermont. My first Stellafane was in 1973, and I've faithfully returned most years. In recent years, I've been drawn to the Conjunction – a much smaller gathering in Western Mass. One of its coordinators is Phil Harrington, the former binocular columnist at *Astronomy*. The Conjunction has become my favorite convention. Stellafane is huge, and I often leave exhausted with a bad case of sensory overload. The Conjunction is a much more intimate gathering, and I always return home relaxed and upbeat.

Clayton: How do you envision amateur astronomy in the next 25 years?

Glenn: I have several concerns, including the aforementioned lack of new blood entering the hobby. Increasing light pollution is another worry. And while a lot of amateur astronomers seem excited about the computer-accessible robotic telescopes located in dark-sky areas, I'm not all that thrilled. To me, astronomy is all about getting outside under a real night sky and

Continued ...

Just Looking... from previous page

enjoying the fresh air, NOT sitting in front of a computer! Amateur astronomers who use these robotic telescopes won't be as troubled by light pollution in their neighborhoods, which might make it harder for traditional backyard astronomers to combat the problem. Why limit the use of outdoor lighting, some may think, when you can stargaze at the computer?

Now for the positive. Backyard astronomy is enjoying an explosion in innovation. Telescope and accessory designs are becoming simpler for beginners and more sophisticated for the veterans. I can't wait to see what marvelous "goodies" will be available to amateur astronomers in 2034 (if I'm still alive!) On a personal note, the sky objects I most enjoy observing are the sun, moon, and planets, plus double stars and variable stars – objects less affected by light pollution than deep sky objects like nebulae and galaxies. I'm looking forward to many more years of backyard astronomical adventures!

Clayton: Do you have any helpful advice to pass on to observers just starting out in astronomy?

Glenn: Find a mentor to help you out, perhaps by getting involved with a local astronomy club. Start out simple! Take time to become familiar with the major stars and constellations, as you'll have to navigate these waters when you finally get a telescope. Before getting a telescope, purchase a good pair of binoculars – either 7X50 or 10X50. Use them to explore some of the night sky's brightest and easy-to-find objects. And when it comes time to buy a telescope, get something that's easy to set up and use. My recommendation – a 6-inch f/8 reflector on a Dobsonian mount. A telescope like this is versatile, and it reveals a wide array of sky objects.

Clayton: Is there an email address that you have that a Houston Astronomical Society member could contact you for an additional question or two?

Glenn: It's gchaple@hotmail.com, and I welcome all questions.

Clayton: Thanks Glenn for taking the time to share your interest and thoughts with us for our monthly HAS newsletter, *The GuideStar*. We wish you luck with all of your astronomy interests. It's nice to know that there are amateurs out there doing real science. Please come visit our society when in the Houston area, we'd love to see you.

Clear skies always, Clayton

Glenn: And clear skies to you and the membership of the Houston Astronomical Society!

**Want new information in the
GuideStar?
Write it!!**

You, too, can be published here.

- What are you doing that's new and exciting?
- What have you read recently (book report!)?
- What new and interesting software are you using?
- Did you have an observation that was especially interesting?
- Any 'lessons learned' from observing attempts?
- What are you looking forward to at the next Texas Star Party?

Send your materials to Bill Pellerin,
the *GuideStar* editor at:

BillPellerin@sbcglobal.net

Publicity Suggestion Box

I welcome any suggestions that any member has to offer. It doesn't matter how trivial you think your idea may be. All input will be reviewed and welcomed.

Let's grow.

Please drop me a note at the following address.

itjdm0@yahoo.com

John Missavage- HAS Publicity

2009 Houston Astronomical Society Banquet

presents

Gravitational Wave Astronomy 101

by

David Garrison, PhD

Faculty Chair and Associate Professor of Physics
University of Houston-Clear Lake

Saturday October 10, 2009

Marriott Westchase - Richmond Room
2900 Briarpark Drive, Houston, Texas 77042

6:30 – 7:30pm Registration & Cash Bar (for details, see <http://www.astronomyhouston.org>)
7:45 – 8:30 Dinner
8:30 – 9:30 Presentation by Dr. David Garrison

Brief Biography

Dr. David Garrison
Associate Professor and Chair of Physics,
University of Houston – Clear Lake

David Garrison began his academic career at the Massachusetts Institute of Technology where he earned his B.S. in Physics in 1997. During his course of study, he minored in Earth, Atmospheric & Planetary Science and completed a concentration in Political Science. He then moved on to The Pennsylvania State University where he completed a Ph.D. in Physics in 2002. After which, he accepted a position as a Visiting Assistant Professor at the University of Houston – Clear Lake.



After serving as a visiting faculty member for one year, he was promoted to tenure-track. During his time in academia, Dr. Garrison earned several awards from organizations including NASA, the Institute for Space Systems Operations, The Alfred P. Sloan Foundation, the Council of Graduate Schools and the Texas Educational Grid Project in addition to several internal grants and scholarships.

During his time on the faculty of UHCL, Dr. Garrison served as Chair of the Physical Science and Physics Programs and successfully developed and oversaw the approval of a revised Bachelors Degree in Physical Science, a Bachelors Degree in Physics, a Masters Degree in Physics, a Professional Masters of Physics sub-plan in Technical Management and a Collaborative Ph.D. Program in Physics. His research in computational and theoretical physics consists of work in Numerical Relativity and Cosmology.

The banquet sponsors are HAS, Land Sea and Sky, and Bob's Knobs.



Land Sea and Sky



Houston Astronomical Society Annual Banquet
October 10, 2009

Registration Form



Name: _____
 Address: _____
 City: _____
 State: _____ zip: _____

Number of people in your party: _____

Home Phone: _____ Work Phone: _____

Affiliation: HAS FBAC NHAC JSCAS ASSET UHCL UH

Names of other persons in your party:

Name	Entree

Dinner choices (mark the number of each meal)

Beef Brisket Plate _____
 Roasted Chicken _____
 Vegetarian Plate _____

Dinner includes Chef's choice of
 dessert, coffee or tea, gratuity, tax

Total number of meals: _____
 Total Due: (# of meals x \$49.00) _____ Until Sept 23 deadline.

Make checks payable to Houston Astronomical Society. Deadline is September 23.

Mail this form to:
 Houston Astronomical Society
 Attn: Judy Dye, Banquet Chairman
 12352 Newbrook
 Houston TX 77072-3910
 281-498-1703
 jadye@rice.edu

Dress Code: Business Casual to Semi-Formal

The HAS Banquet is sponsored by the HAS, Land Sea and Sky, and by Bob's Knobs.
 Thank you to our sponsors.



Land Sea and Sky

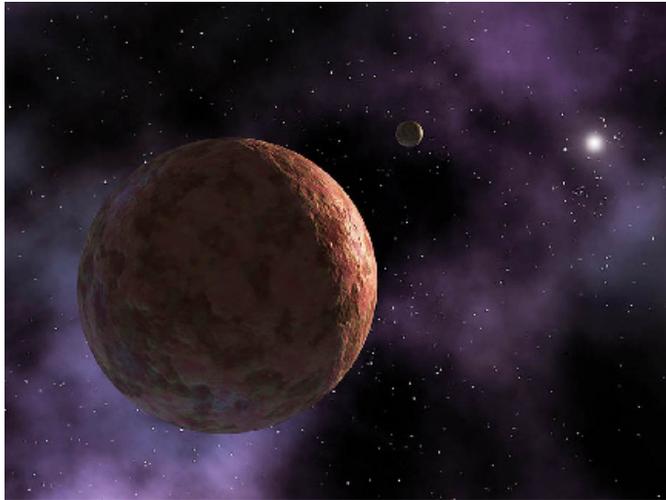


Bob's Knobs™
COLLIMATION THUMBSCREWS

A Planet Named Easterbunny?

You know Uranus, Neptune, and Pluto. But how about their smaller cousins Eris, Ceres, Orcus, and Makemake? How about Easterbunny?

These are all names given to relatively large “planet-like” objects recently found in the outer reaches of our solar system. Some were just temporary nicknames, others are now official and permanent. Each has a unique story. “The names we chose are



Artist's rendering of dwarf planet MakeMake, discovered around Easter 2005. Unlikely to gain acceptance their nickname Easterbunny, the discoverers named it for the god of humanity in the mythology of Easter Island.

important,” says Caltech astronomer Mike Brown, who had a hand in many of the discoveries. “These objects are a part of our solar system; they're in our neighborhood. We ‘gravitate’ to them more if they

have real names, instead of technical names like 2003 UB313.” Nearby planets such as Venus and Mars have been known since antiquity and were named by the ancient Romans after their gods. In modern times, though, who gets to name newly discovered dwarf planets and other important solar-system bodies? In short, whoever finds it names it. For example, a few days after Easter 2005, Brown and his colleagues discovered a bright dwarf planet orbiting in the Kuiper belt. The team’s informal nickname for this new object quickly became Easterbunny.

However, ever since its formation in 1919, the International Astronomical Union (IAU) ultimately decides whether to accept or reject the name suggested by an object’s discoverers. “Easterbunny” probably wouldn’t be approved.

According to IAU guidelines, comets are named after whoever discovered them—such as comet Hale-Bopp, named after its discoverers Alan Hale and Thomas Bopp. Asteroids can be named almost anything. IAU rules state that objects in the Kuiper belt should be given mythological names related to creation.

So Brown’s team started brainstorming. They considered several Easter-esque names: Eostre, the pagan mythological figure that may be Easter’s namesake; Manabozho, the Algonquin rabbit trickster god.



In the end, they settled on Makemake (pronounced MAH-kay MAH-kay), the creator of humanity in the mythology of Easter Island, so named because Europeans first arrived there on Easter 1722. Other names have other rationales. The dwarf planet discovered in 2005 that triggered a fierce debate over Pluto’s status was named Eris, for the Greek goddess of strife and discord. Another dwarf planet with an orbit that mirrors Pluto’s was dubbed Orcus, a god in Etruscan mythology that, like Pluto, ruled the underworld.

Brown says he takes “this naming business” very seriously and probably spends too much time on it. “But I enjoy it.” More tales of discovery and naming may be found in Brown's blog MikeBrownsPlanets.com.

Constellations have also been named after ancient gods, human figures, and animals. Kids can start to learn their constellations by making a Star Finder for this month at spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml. There you will also find a handy explanation of why astrology has no place in science.

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

Gravitation Wave Astronomy 101

Abstract of the 2009 HAS Banquet Presentation

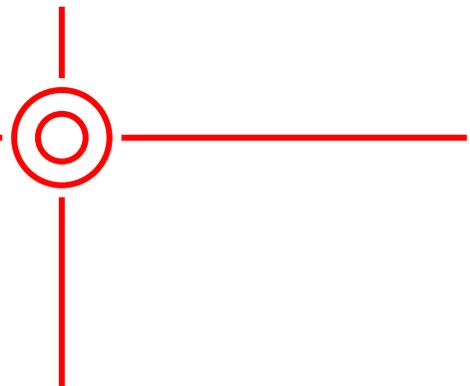
By David Garrison, PhD

University of Houston Clear Lake, Physics Department

In this talk I introduce the field of gravitational wave astronomy. I do this from the point of view of someone who is using astronomy to answer several fundamental but challenging questions about our universe. How did the universe begin? How do we know what we think we know about the history of the universe? How can we test our theories? To answer these questions, I show how we use conventional astronomy, Einstein's General Theory of Relativity, lots of large machines and a few supercomputers. My goal is to make this information accessible to a general audience so those without a background in physics or astronomy can also understand this talk.

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Observatory Corner



By Bob Rogers, Observatory Chairman

Hello everyone.

Not much to report on for August except for it being HOT and dry. I would like to remind everyone of the HAS Annual Picnic scheduled for the October 17th weekend at the site. Our picnic chairman, Mike Edstrom has told me that instead of hamburgers and hotdogs being served, that he has something better in store for everyone. You didn't hear this from me, but he said something about cooking Briskets. Sounds good to me.

Also, I would like to remind everyone that the following weekend, October the 23rd is the Astronomy Day Regional meeting and the 24th is Astronomy Day at the George Observatory. Folks, we can use your help as volunteers at Astronomy Day. This is our once a year event that reaches out to the public to teach them about Astronomy. Every year, all the clubs that are involved usually end up with new members from this event. So if you would like to come out and help and have a good time doing it, please contact Cynthia Gustava at cynm31@att.net Your help would be very much appreciated.

If you have a Randalls card, and have not done so, please have it coded for the Houston Astronomical Society. Our number is #6618. The Society gets 1 percent of the gross sales that members spend at Randalls. Randalls totals up the amount spent each quarter and will send us a check if the amount goes over \$2,500.00, otherwise the total rolls over to the next quarter or zeros out at the end of the calendar year. So please link your Randalls card to the Houston Astronomical Society so that the society can benefit from this Randalls program. Our number is #6618. This is very easy to do, just go to the Courtesy Booth and tell the person there what you want to do.

If you have any suggestions or thoughts for the site, let me know.

Thanks,

Bob Rogers
Observatory Chairman
281-460-1573
siteworkerbob@hotmail.com

Summer Book Reading List

by Bill Pellerin, GuideStar editor

Summer is supposed to be book-reading time, so here are some quick recommendations.

Why does $e=mc^2$ (and why should we care?) by Brian Cox and Jeff Forshaw. A bit of a difficult read in some sections. The authors *try* to make the material accessible, and a lot of it is, but some of the material requires some head-scratching if it has been a long time since you sat through a physics class.

13 Things that Don't Make Sense by Michael Brooks. The book begins with a chapter on dark matter / dark energy and does a good job explaining what the issues are. Other chapters are about astronomical and non-astronomical subjects. Easy to read. Available in paperback.

Spring Forward by Michael Downing is subtitled 'The Annual Madness of Daylight Saving Time'. This book is a history of the implementation of daylight saving time. Should be a good read. I got this book for \$4 at the Half-Price book store on Westheimer near Montrose. Plenty of copies in stock. There's a good stock of astronomy books at this store, too.

The Day We Found the Universe, by Marcia Bar-tusiak. I've recommended this book before, but I'll remind you of it again. It's the history of astronomical research leading up to Edwin Hubble's determination of the distance to the Andromeda Galaxy. (There's an excerpt from this book in the September, 2009 *Sky & Telescope* magazine.)

Epsilon Lyr - the Double-Double

by

Bill Pellerin, GuideStar Editor

Object: Epsilon Lyr
Class: Double Stars
Magnitude: 4.7
R.A.: 18 h, 44 m, 20 s
Dec: 39 degrees, 40 minutes, 16 sec
Distance: 160 ly
Constellation: Lyra
Size: 208" (largest double); 2.5 arc seconds (each pair)
Optics needed: Naked eye / binocs show primary double; small telescope for secondary doubles.

Why this object is interesting.

If you have observed the double-double, this object will already be on your favorites list. If you haven't observed the double-double, it will be on your list after your first observation. It's one of those objects I go back to again and again.

If your eyes are sharper than mine, you might be able to observe the primary double without optical aid. Even if you can't, you'll be able to see the primary double with any small binoculars. No problems here.

Things get a bit more interesting when you're trying to observe the secondary double stars. Each of these pairs is separated by a mere 2.5 arc seconds, so you'll need an eyepiece that gives you about 100x magnification to see these guys. In my experience I simply keep boosting the eyepiece power until I can see the split, so I'm not sure what power I've used to observe this beauty.

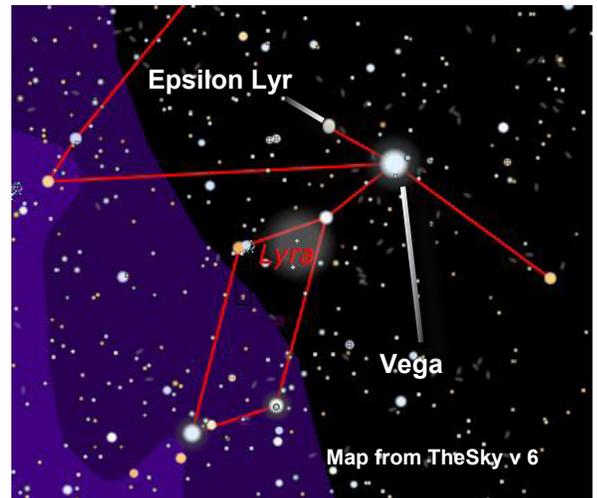
The star pairs are called Epsilon¹ and Epsilon², and the northernmost pair is epsilon². Sissy Haas says in her book *Double Stars for Small Telescopes* that Epsilon¹ is "straw yellow with a smaller artice-blue companion, and Epsilon² is a pair of amber-yellow twins". This whole arrangement of stars requires good and well collimated optics to see. With good optics you will see four little Airy disks of light -- each star forming one bright and small circle of light and each surrounded by one or more diffraction rings that are concentric with the star.

The two stars comprising Epsilon¹ are about 150 AU apart, meaning that the distance between the stars is equal to about 150 times the distance between the Earth and the Sun.

So, in addition to being a beautiful sight, observing the double-double will convince you that your optics are performing as expected (or not).

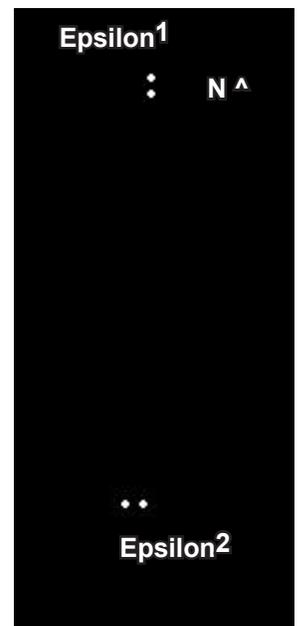
Information for this object from:

A Field Guide to Double Star Observing, by Joe DalSanto
Double Stars for Small Telescopes, by Sissy Haas



*North is up.
This drawing
is not to scale.
It is intended to
provide you with
the orientation
of the stars in
this system*

Drawing by Bill Pellerin



The Hundred Greatest Stars, by James B. Kaler
The Cambridge Double Star Atlas, by James Mulvaney and Wil Tirion

General Membership Meeting

The Houston Astronomical Society holds its regular monthly General Membership Meeting on the first Friday of each month, unless rescheduled due to a holiday. Meetings are in Room 117 of the Science and Research Building at the University of Houston. A Novice Presentation begins at 7:00 p.m.. The short business meeting and featured speaker are scheduled at 8:00 p.m. Also typically included are Committee Reports, Special Interest Group Reports, current activity announcements, hardware reviews, an astrophotography slide show by members and other items of interest. Parking is NOW across from Entrance 14, by the stadium.

Board of Directors Meeting

The Board of Directors Meeting is held on dates scheduled by the board at 7:00 p.m. at the Houston Chronicle office, downtown. Information provided to GuideStar will be published. The meetings are open to all members of the Society in good standing. Attendance is encouraged.

GuideStar Information

The H.A.S. *GuideStar* is published monthly by the Houston Astronomical Society. All opinions expressed herein are those of the contributor and not necessarily of Houston Astronomical Society. The monthly Meeting Notice is included herein. *GuideStar* is available on the HAS web site to all members of H.A.S., and to persons interested in the organization's activities. Contributions to *GuideStar* by members are encouraged. Electronic submission is helpful. Submit the article in text, MS-Word format via email BillPellerin@sbcglobal.net. Copy must be received by the 15th of the month for inclusion in the issue to be available near the end of the same month. Or, bring copy to the General Membership Meeting and give it to the Editor, or phone to make special arrangements.

Editing & Production: Bill Pellerin, 713-880-8061; FAX: 713-880-8850;
Email: BillPellerin@sbcglobal.net

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Houston Astronomical Society

Meeting on Friday, September 4

7:00 Novice & Site Orientation

8:00 General Meeting

University of Houston

Directions to meeting:

from I-45 going south (from downtown)

- exit at Cullen Boulevard
- turn right on Cullen
- turn left into UH entrance 14
- Science and Research is on the left

From I-45 going north (from NASA/Galveston)

- exit at Cullen Boulevard
- turn left on Cullen to UH entrance 14

Parking:

There is Free Parking, **BUT DO NOT PARK IN ANY RESERVED PARKING SPACES AT ANY TIME.**

U of H parking enforcement will ticket your vehicle.

Houston Astronomical Society

P.O. Box 20332 • Houston, TX 77225-0332



The Houston Astronomical Society welcomes you to our organization. The HAS is a group of dedicated amateur astronomers, most of whom are observers, but some are armchair astronomers. The benefits of membership are:

- Access to our 18 acre observing site west of Houston -- a great place to observe the universe!
- A telescope loaner program -- borrow a HAS telescope and try observing for yourself!
- A monthly novice meeting, site orientation meeting, and general meeting with speakers of interest.
- Opportunities to participate in programs that promote astronomy to the general public (such as Star Parties at schools)
- A yearly banquet with a special guest
- A yearly all-clubs meeting for Houston area organizations
- Meet other amateurs and share experiences, learn techniques, and swap stories

***You're invited to attend our next meeting.
You'll have a great time.***