

Houston Astronomical Society

GuideStar

October, 2007

At the October 5 meeting...



Star Clusters

Naved Mahmud

Most stars form in groups or clusters. When we look up at the sky, we see many stars still in the clusters in which they originally formed. These clusters are very useful to astronomers, since, in a given cluster, all the constituent stars are about the same distance from us and formed at about the same time. Thus, star clusters can be used as cosmic laboratories for studying stellar evolution.

Naved will cover the basic science of star clusters, talk about the astrophysical applications, review some of the latest developments, and show plenty of pretty pictures!

Naved Mahmud is a 3rd year graduate student in the Rice Astrophysics department.

Highlights:

Meeting Announcement.....	1
Tracy Knauss - telescope builder	5
A Weekend of Astronomy.....	7
The Garnet Star.....	8
Minutes of the September meeting.....	11
Space Place - A Missle in your Eye	13
Observatory Corner	14
Astrophysics is Easy!	15

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.
DJ McCracken (FBAC) -
Celestial Coordinates

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.

Officers & Past President

President: Bill Leach.....	H: 281-893-4057
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Don Pearce.....	713-432-0734	
Bram Weisman.....		
John Missavage.....		

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Logo Mds Sales.....	Judy Dye	281-498-1703
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Publ. Star Party	Richard Nugent	713-524-1993
Rice U. Coord.....	Matt Delevoryas	713-666-9428
Schedule Obsv'ty.....	Steve Goldberg	713-721-5077
Texas Star Pty	Steve Goldberg	713-721-5077

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.

Table of Contents

- 3.....October/November Calendar
- Web site
- 4.....Observations of the Editor
- Mark Your Calendar
- 5.....Just Looking
- Tracy Knauss - telescope builder
- 7.....A Weekend of Astronomy
- 8.....Shallow Sky Object of the Month
- The Garnet Star
- 9.....Astronomical League
- Membership Renewals
- 10.....Logo Sales
- 11.....Minutes of the September Meeting
- 12.....Want Ads
- 13.....Space Place
- A Missile in your Eye
- 14.....Observatory Corner
- 15.....Astrophysics is Easy! (book review)
- 16.....Observatory Duty Roster

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 Pearce	713-432-0734
Lunar & Planetary.....	John Blubaugh	713-921-4275

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: <http://www.ghg.net/cbr/jscas/>

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

October/November Calendar:



Photo by Scott Mitchell

Date Time **Event** Photo by Scott Mitchell

October

- | | | |
|----|------------|--------------------------------------|
| 3 | 5:07 a.m. | Moon at Last Quarter |
| 3 | 5:07 a.m. | Moon at Last Quarter |
| 5 | 7:00 p.m. | HAS Novice Meeting, U of H |
| | 8:00 p.m. | HAS General Meeting, U of H |
| 9 | | Draconid Meteors Peak |
| 11 | 12:01 a.m. | New Moon |
| 13 | | Prime Night, Columbus Observing Site |
| 19 | 3:33 a.m. | Moon at First Quarter |
| 21 | | Orionid Meteors Peak |
| 26 | 11:52 p.m. | Full Moon |
| 28 | 10:00 a.m. | Venus at greatest elongation west |

November

- | | | |
|----|-----------|---|
| 1 | 4:19 p.m. | Moon at Last Quarter |
| 2 | 7:00 p.m. | HAS Novice Meeting, U of H |
| | 8:00 p.m. | HAS General Meeting, U of H |
| 4 | 2:00 a.m. | Daylight Savings Time Ends |
| 8 | 2:00 p.m. | Mercury at Greatest Elongation West |
| 9 | 6:00 a.m. | 1 Ceres at Opposition |
| | 5:03 p.m. | New Moon |
| 10 | | Prime Night, Columbus Observing Site |
| 17 | 4:32 p.m. | Moon at First Quarter |
| 18 | | Leonid Meteors Peak |
| 24 | 8:30 p.m. | Full Moon |
| 29 | 7:30 p.m. | HAS Board Meeting, Houston Chronicle Building |

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

Check the web site:

www.astronomyhouston.org
Webmaster: Kay McCallum
KayMcCallum@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 KayMcCallum@MccLibrary.net.

Publicity Suggestion Box

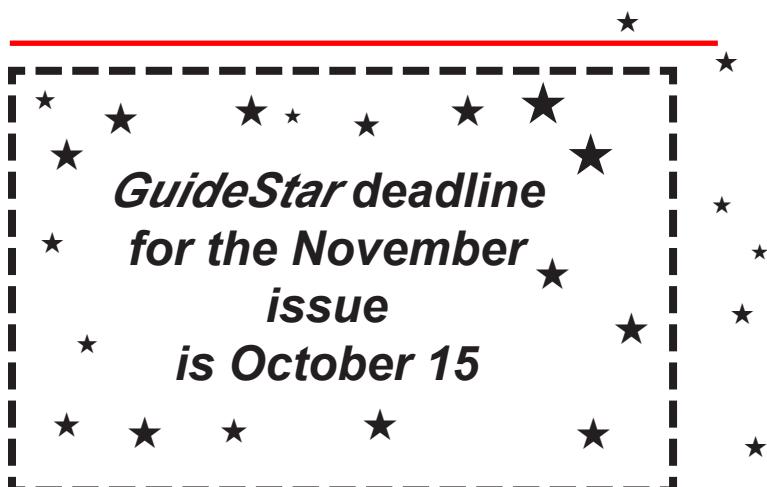
I welcome any suggestions that any member has to offer. It doesn't matter how trivial you think your idea may be. All input will be reviewed and welcomed.

Let's grow.

Please drop me a note at the following address.

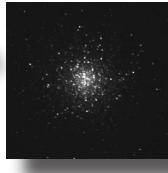
itjdm0@yahoo.com

John Missavage- HAS Publicity Chair



Observations... of the editor

by Bill Pellerin, GuideStar Editor



...and Everything in its Place

Do you have a problem organizing all your astronomy stuff? It's really important to be sure that you have everything you need when you make a trip to the HAS site, your personal observing site, or to a star party. One forgotten item can doom the entire trip and leave you unable to use your equipment. We've all heard stories about fellow amateurs who forgot their eyepieces at home or some other critical component of their observing session.

I've developed a process around organizing these items that works for me. It's not foolproof, no system is, but I almost always have what I need when I get ready to set up for an observing session.

Here's the idea -- when I'm trying to decide where to keep a particular piece of equipment, I ask myself this question, "What's the context of this item?". In other words, I'm asking myself what are the circumstances under which I use this piece of equipment. Once I've answered that question, I put the object in the right context and know that I'll have it when I need it.

For example... I have a USB to serial port adapter which allows me to connect my laptop computer to various computer-controlled telescopes. (Most personal computers don't have serial ports any more, but telescope mounts continue to use them. It won't be long, I suppose before the connection to telescope mounts will be USB to USB.) Since I have more than one telescope mount that uses this connection I shouldn't associate this adapter with any one mount. The one thing that's always used in the context of this adapter is the laptop computer. So, the right context of the cable is with the laptop, so the cable lives in the laptop computer bag.

Likewise, the red plastic screen cover that's used with the laptop during observing sessions resides in the laptop bag. The only context in which I use the screen cover is when I'm using the laptop.

One more example. I have a focal reducer that I use with my CCD camera (for photometry). The focal reducer doesn't work for visual observing, so the only context in which it is used is with the CCD imager. So.. it's in the case with the imager.

I hope to see you all at the all-clubs meeting and at Astronomy Day this year. It sounds like fun. Volunteer to help at www.astronomyday.org.

***Until next time...
clear skies and new moons!***

..Bill

billpellerin@sbcglobal.net

Mark Your Calendars!!!

There is one more field trips to our Columbus observing site in 2007:

December 01

This date is a Saturday.

We will be inviting members of all the area clubs to each event as we did in previous months (the turnout was great!).

There will be a laser tour of the constellations to begin the evening, and the observatory will be staffed for telescopic tours as the sky darkens. We will have "light windows" for those who bring families and would like to leave a little early.

Please mark your calendars, pack your gear and observing list, and come on out. Our website www.astronomyhouston.org will keep you up to date on details as they are developed.

See ya' there,

***George Stradley, Field Trip / Observing Coordinator
stradley@sbcglobal.net***

Just Looking

A GuideStar Interview by Clayton L. Jeter

Tracy Knauss - telescope builder

How could a local area amateur astronomer not know Tracy Knauss? It seems she's at every local star party I have attended in recent years. She's everywhere! Tracy can always be seen showing off her homebuilt scope or observing with her eye to the focuser. Tracy seems to have a passion for astronomy and it really seems to show. She's a long time member of the Fort Bend club. Let's listen to why Tracy is so passionate about her love with the stars...



Tracy Knauss

Here's Tracy...

I have been involved with astronomy for more than half of my lifetime. It all started out with a cheap refractor and I stumbled across Saturn and Jupiter. What a gorgeous site, even in that scope I could see Saturn's ring and Jupiter's bands. That peaked my interest, but I thought what else is out there? From there I have helped with a couple of articles for the Webb Society Magazine, participated in "Deep Impact Small Telescope Science Program" and assisted Brent Archinal with some images for his "Star Cluster" book. I am currently the newsletter editor of the Fort Bend Astronomy Club and am always looking for articles for the newsletter.

My other interest is woodworking. I have built my 18" and 10" truss tube telescopes and just finished building a direct drive platform driver for my 18" telescope. Right now I am currently in the process of rebuilding Judy Dye's 13.1 telescope to a truss tube design.

I enjoy observing as well as building telescopes. I am still as enthusiastic as I was when I first started, for there are always objects to view at in the universe. Remember keep looking up!

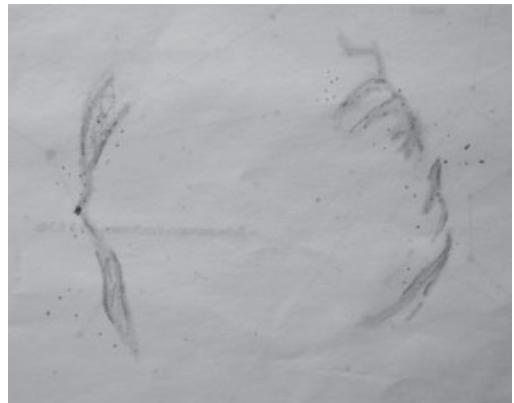
Clayton: How did you first become interested in astronomy?

Tracy: Through my dad, he was part of the NASA program of "Put a Man on the Moon". We would look at the moon when it was up, that sparked an interest in me. Later on I found out about astronomy clubs in the late 80's through a friend and joined the Fort Bend Astronomy Club. At that time the astronomy clubs were not very well advertised. From there, I have been looking up ever since.

Clayton: Do you think that by becoming involved in astronomy, it has somehow changed a direction in your life?

Tracy: Oh, definitely. I would not have become involved with the George Observatory as I have over the years. Volunteering, teaching the public about the night sky, and what they can do about it to preserve it.

Clayton: You showed me your home built telescope during Astronomy Day last year. How did you come up with the design? Was it quite a task to build?



Drawing of the Veil Nebula through my 18" telescope

Tracy: I was looking for ways to keep it light in weight, so I kept cutting out areas that did not have to have wood in them. All the wood I took out shaved away 13 extra pounds that my scope would have had. Also being able to remove the mirror from the mirror cell makes each individual piece doable. My heaviest

Continued ...

Just Looking... from previous page

piece is the mirror box at 40 pounds. The scope as a whole was not difficult to build because I used David Kreige's book on "The Dobsonian Telescope" on the basic design and the formulas. I had also gotten the aluminum poles from Dana Lambert when they were cleaning out their old house before they moved, so I have to work around that. They were only 48" long, but no problem, just make the mirror box taller.

Clayton: Are you a visual observer only? Tell us about a typical observing session for yourself.

Tracy: For the most part I am a visual observer. I did get bit by the CCD bug a few years ago, but decided that if I want to do CCD, the best place is the George 36" telescope for that. For my own personal observing session, I set my scope up in the backyard with drawing supplies in hand, smudge and soft pencils, along with my elastic gray eraser. I have the inside house change to red bulbs (kitchen & bathroom) and Megastar running on my computer. I have Uranometria books on my table outside ready to view the night sky. I try to draw everything I see through my scope and just finished the Caldwell objects and will always be working on the Herschel objects.

Clayton: So most of your observing is at home?

Tracy: Yes, in my backyard, for it is like your Columbus site, except that when I am ready to go to bed, I just cover my scope, then walk twenty feet. I can easily see the Milky Way in the summer time. I have a nice low southern horizon. Besides the neighbors don't care if I play music, for my closest neighbors are five acres away from me.

Clayton: Are any of your family or neighbors interested in your hobby? Do they observe too?

Tracy: Not any more

Clayton: *Sky and Telescope* or *Astronomy*? Why?

Tracy: Actually, I prefer *Amateur Astronomer Magazine*. *Sky and Telescope* along with *Astronomy* seem to run the same articles, so *Amateur Astronomer* is a refreshing delight to read. It is about amateurs for amateurs. Anything else I can get from the Internet, especially the latest happenings.

Clayton: Do you have an amateur observing mentor?

Tracy: When I really got involved in astronomy, Barbara Wilson steered me in the direction that I have taken today. She always stated "push your scope and your abilities regardless of the magnitude of the object". And you know what, she was right, I have always kept with that theory. My other mentor I would have to say is William Herschel and all the amazing objects he was able to discover. One of these days I will have observed and drawn all the Herschel objects, my life long goal. I think I am about a third of the way through all the Herschel objects.

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

Tracy: I go to the Texas Star Party every year to do some observing in really dark skies. I also meet up with old friends from across the states and country. I also go to Leaky, Texas twice a year, one in the fall and the other in the spring. I get together with friends and do observing. For astronomy is about being with friends that share the same interest.

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

Tracy: I think one will see more amateurs working with professionals working on a professional level. There will also be more amateur astronomers with robotic telescopes so they do not need to drive to these far away places to view the night sky. One thing the amateur needs to watch out for is the availability of dark skies. If we don't keep up with preserving the night sky there will be nothing for our kids, their kids and their grand kids. The Milky Way will just be something of the past.

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

Tracy: Join a club and get involved. Talk to the members of the club find out their trials and tribulations. Then go forward with your path.

Clayton: Thanks Tracy 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. Please come visit our society, we'd love to see you there.

P.S. I too am a William Herschel fan. He's also my mentor!

A Weekend of Astronomy

7th Annual Houston/Beaumont Regional Astronomy Meeting

Hosted by Fort Bend Astronomy Club

Where: Auditorium of the Houston Community College Administration Building, at the intersection of Main and Elgin

When: Friday, October 19, 2007.

Refreshments and Registration: 7:30 PM
Meeting - 8:00 to 10:30 PM.

Main Speaker: Stephen James O'Meara
of *Astronomy* magazine



Stephen
James
O'Meara

Presentation: "Comets and the Witch Hysteria of 1692"

Parking: Available in the 3100 South Main parking garage at no charge all evening. Parking here is plentiful and safe.

Astronomy Day T-shirts:

The Astronomy Day 2007 T-shirts will be available at 7:30 PM (\$15).
Proceeds will be used to support the regional meeting and Astronomy Day events.

Astronomy Day

The George Observatory in Brazos Bend State Park

Astronomy Day will be held Saturday, October 20, 2007 from 3 to 10:30 pm. at the George Observatory in Brazos Bend State Park southwest of Houston, Texas.

Indoor and Outdoor Presentations starting at 4:00 PM

- Challenger Center Flight Simulations - "Return to the Moon"
- Observe Sunspots and Solar Prominences
- Observe the Moon and Deep Sky Objects
- Professional Research Telescope Viewing (36", 18", 14" and 11")
- Dozens of Amateur Telescopes to View the Skies
- Face Painting
- How to Get Started in Astronomy
- How to Use and Purchase Telescopes
- Astronomy Buttons
- Free Material and Astronomy Handouts
- Meet the Local Astronomy Clubs
- Indoor Displays (CCD Imaging, Interactive computers, Meteorites, Light Pollution)
- The George Observatory Gift Shop will be open for the entire event!



The 36" telescope at the
George Observatory

The Garnet Star

Object: The Garnet Star (SAO 33693; Mu Cep)

Class: Star

Magnitude: 4.08 (variable 3.4 to 5.1)

R.A.: 21 h, 43 m, 30 s

Dec: 58 degrees, 46 minutes, 48 seconds

Distance: 5,260 LY

Constellation: Cepheus

Optics needed: Naked eye, binoculars or small telescope

Why this object is interesting.

This bright (but variable) orange or reddish star is easy to spot and is high in the sky at this time of the year. It transits at 9:13 p.m. on October 20. The star sits on the edge of IC1396...

The star is very large at 2.4 billion miles across. This is larger than the orbit of Saturn and 1650 times the diameter of our Sun. The period of variability is 730 days.



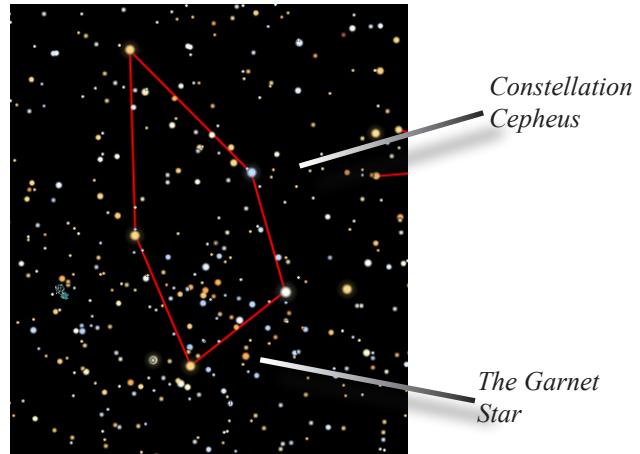
Hershel

It was Sir William Hershel (1738-1822) who gave it the name the 'Garnet Star'. One problem with this description, of course, is that garnet rock show up with different colors. Which one did he mean? There are even reports of the star appearing to be purple to some observers, although the star is designated as a 'M' star. This is how he described the star in the transactions of the Royal Astronomical Society:

A very considerable star, not marked by Flamstead, will be found near the head of Cepheus. It is of a very fine deep garnet colour, such as the periodical star o ceti was formerly, and a most beautiful object, especially if we look for some time at a white star before we turn our telescope to it, such as a cephei, which is near at hand. (from aavso.org web site)

The Garnet Star's history is typical for a star of this size. The star burns (fuses) hydrogen into helium early in its life, releasing energy in the form of light in the process. When much of the hydrogen has been used up the star expands to its current red supergiant phase and it is now believed to be fusing helium into carbon. Fusion continues through several phases, and the star ends its life as a supernova. In a supernova, the star's core collapses, then rebounds. A massive shock wave moves through what's left of the star's materials and we see a supernova.

The star currently varies in brightness by 1.5 magnitudes and this variability indicates some instability in the star and tells us quite a bit about what's going on internally with the



*The location of the Garnet Star
from TheSky v6*

star. Stars such as Mu Cep (the Bayer designation) are called 'Small Amplitude Red Variables'.

There are other red variables that you can enjoy, one of which has been written about in this series -- Hind's Crimson Star. This one's in Lepus, just south of Orion, so look for this one later in the year.

Other examples of SARV's are:

Betelgeuse - Alpha Ori. Most of us don't think of this star as a variable, but it is.

R Lyr - north of the main part of the constellation W Cyg

How can I learn more about the Astronomical League?

Amateur astronomers from across the country benefit from perusing the many pages of the Astronomical League's website, www.astroleague.org. Naturally, this is the place to go if you're looking for information about upcoming events and League news. But there is so much more...

Want to learn all about one of the great League observing programs? Go to www.astroleague.org/observing.html.

Do you know of a worthy candidate for one of the many League awards? Look at <http://www.astroleague.org/al/awards/awards.html>.

Are you interested in buying a particular book about our fascinating hobby? Then go to www.astroleague.org/al/book-serv/bookserv.html.

There is even something to help your club function better. Try www.astroleague.org/al/socaids/socaidid.html

Make the most of your Astronomical League membership! **To find out more about what the Astronomical League offers you, why not log on to www.astroleague.org today?**

Membership Renewals...

Your membership is renewable on January 1 of each year.

Total yearly dues are \$36.

If you paid your dues any time in 2006, your payment for 2007 was due as of January 1, 2007. If you want to get a jump start on your 2008 dues, you can pay them now!!

Magazine subscriptions can be renewed at any time and the renewal does not need to be synchronized with your HAS dues.

Membership in the Houston Astronomical Society is one of the great bargains in Astronomy. For a regular membership of \$36 you get the opportunity to support an active and growing organization, you get the monthly *GuideStar* newsletter, and you get access to the outstanding H.A.S. observing site near Columbus, Texas. (You must attend an orientation, given monthly, to use the site.) And, after two months of membership you can borrow, at no charge, one of the Society's loaner telescopes. It's the best deal in town, we think. Please renew your membership when it expires.

Encourage other astronomy enthusiasts to join the organization as well. It's a great group.

Thanks!



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advantageteescoperepair@gmail.com



Logo Sales

In addition to all the other cool stuff that Judy Dye has available in Logo Sales, the 2007 "Observer's Guide" is available. This book is a must-have for planning your observing in 2007, so if you don't have your copy come to the meeting, see Judy, and buy one.

All checks should be made out to HAS for the correct amount, and mailed to Judy Dye, 12352 Newbrook, Houston TX 77072-3910. If there are any questions, please call. Our phone number is 281-498-1703.

Judy Ann Dye

Minutes
of the September, 2007 Meeting of the

Houston Astronomical Society

The September, 2007 meeting of the Houston Astronomical Society was called to order on September 7th at 8:01 p.m. by HAS President, Bill Leach.

General Announcements:

- Bill Leach introduced himself and welcomed everyone, including four new members and five guests, to the meeting.
- Bill announced that the 7th Annual Houston/Beaumont Regional Astronomy Meeting will be held on the evening of October 19th at Houston Community College. Noted author and observer, Steven J. O'Meara, will be the featured speaker. Full details of this event will be available on the HAS website, <http://www.astronomyhouston.org>.
- Bill also announced that Astronomy Day is October 20th at the George Observatory. There will be many activities including indoor and outdoor displays, presentations, solar observing and of course, observing after dark. HAS needs volunteers to work our table at this event. Benefits to volunteers include free admission and free food, so please contact Bill to volunteer. Check the HAS website for more details.
- Amelia Goldberg announced that the annual HAS picnic will be held September 15th at the HAS Observing Site in Columbus. Those planning to attend must RSVP in advance to Amelia. In conjunction with the picnic, there will be a star party beginning with a green laser tour of the constellations at dusk. In addition, members will be running the club observatory scopes for attendees. For more information on the HAS Picnic and Star Party check the HAS website.
- Amelia Goldberg presented Jim Cate with the Astronomical League's Honorary Messier certificate #2359 and pin, presented for observing and logging all 110 objects on the Messier List.
- Amelia Goldberg presented Larry Wadle with the Astronomical League's Universe Sampler Certificates #71 (Telescopic) and #75 (Naked Eye) and pin for completing and logging the observations listed in the Universe Sampler Program.
- George Stradley announced Star Party schedule for rest of year. In addition to the September 15th star party to be held in conjunction with the picnic, the last star party of the year is scheduled for December 1st. There is also a novice star party scheduled for January 26, 2008 for novices and more experience observers who would like to mentor them.
- Richard Nugent announced that on October 11th asteroid 940 Kordula occults a magnitude 11.3 star over Houston. Details will be posted on the HAS website and list server. Richard also gave a brief presentation on occultation basics.
- Bill Leach announced that old issues of Sky and Telescope and Astronomy are available to members as we continue to clean out the HAS library.
- Ken Miller announced that the nomination process is ongoing for the club positions for next year. Members interested in serving the club next year should contact Ken using the phone number listed in GuideStar or they can email Ken at the address listed on the HAS website.
- Bill Leach solicited donations toward the cover for the recently donated tractor at our Columbus observing site. Anyone interested in making a tax deductible contribution for the tractor cover should contact Bob Rogers or Bill Flanagan at the numbers listed in the GuideStar.
- Bill Leach announced that the U of H is enforcing the reserved parking and no parking signage on the road next to the Science and Research Building. Members attending the General Meetings are encouraged to park in the faculty lot in the stadium parking area across the street as this area is our designated parking area on meeting nights.
- Bill Leach and the membership thanked Welcoming Committee Chair, Lee Lankford, for the meeting refreshments.

Continued ...

Minutes... from previous page

- Bill Leach welcomed Audit Committee Chair, Tom Blocker, back to the club after his extended absence due to illness.
- Tony Settles requested a moment of Silence in remembrance of famed Italian tenor, Luciano Pavarotti, who passed away a day earlier.

Program

Bill Leach introduced the featured speaker for the evening, HAS Novice Program Committee Chair, Justin McCollum, who gave his presentation, The Great Moons of the Outer Solar System – Part I1. At the conclusion of his excellent presentation, Justin answered questions, and Bill presented him with a gift of appreciation from the society.

Closing Announcements

- Bram Weisman conducted an auction of a 10" Cave Astrola telescope that had been donated to the HAS Loaner Telescope Program. The reserve was not met.
- Bill Leach reminded those interested in volunteering for Astronomy Day to see him after meeting and pronounced the meeting adjourned at 9:26 p.m.

❖ Want Ads ❖

For Sale: Losmandy G11 with extras.

This is the non-goto version. Asking \$1750, negotiable. Includes standard equipment: tripod, mount, counterweight, hand controller. Asking price also includes upgraded RA worm gear, aluminum motor covers, deluxe clutch knobs, deluxe tripod knobs, polar alignment scope, and spare hand controller. Other extras available.

Contact Dick Locke if interested: rtlocke@gmail.com

For Sale: Celestron Starhopper, 8" Dobsonian Telescope

\$250.00, Kerry Warner, 713 784 7673

For Sale: 17.5" Newtonian

Perfect for imaging or visual star parties. 17.5" f4.5 Newtonian telescope with highly accurate microprocessor-controlled, stepper-based alt-az drive system with focal plane rotator. Designed and built by Andy Saulietis and the owner. Accepts ST4-compatible inputs for autoguiding. Mechanical and calibration work done by the owner to optimize system accuracy for autoguided CCD imaging. Original 1981 Coulter mirror refigured to smooth 1/8th-wave surface by Sky Optical in late 80's. Primary and secondary recoated with enhanced coatings group by PAP in early 90's. Optics in excellent condition. 80mm f5 finder. Breaks down to numerous major

pieces for transport. With modest effort, can be a traveling scope, but better as a semi-permanent observatory. See my website for many images made with this system over the last decade.

Price negotiable. For pickup/delivery, maybe can meet you halfway.

Call 281-482-5190 or E-mail Al Kelly.

For Sale: Celestron Nexstar 8

Like New Condition...Celestron Nexstar 8, Used only 2 times in back yard. Some extras include Solar filter, 1 1/4" star diagonal, 40 mm multi-coated nexstar plossel, 8-24 mm Z00 eyepiece, variable polarizing filter, 2X multicoated Barlow. \$ 850.00 Jack DeNina, Willis,Texas 936-856-0704, jjack9485@cs.com

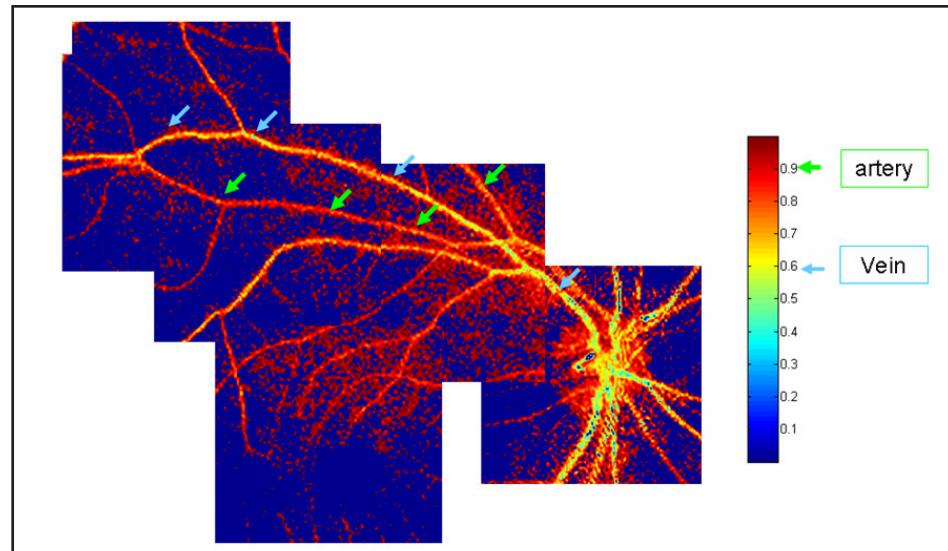
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A Missle in Your Eye

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,



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.)

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.

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. 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

Observatory Corner

By Bob Rogers, Observatory Chairman



Hello everyone.

I'm glad to report that the Annual HAS Picnic at the Observing site on September 15th was a great success. I'm also glad to report that there was no rain at this picnic like we have had in the past. We had around 95 members and guest show up to enjoy the good food and the clear skies for observing. I want to give a big Thank You to Amelia Goldberg for organizing and planning the event. Without her, it wouldn't have happened. Also, a big Thank You goes to Steve Goldberg, Dana Lindstrom and Steve Simpson for cooking the hamburgers and hot dogs and to Warren Wundt for working the fans to keep the smoke from overwhelming the cooks. And thank you to all those that brought chips, beans and the sweets. I'm looking forward to next years picnic.

At the August membership meeting, I gave a quick PowerPoint Presentation introducing the Observatory Committee's new "Toy". This is a Yanmar 2610 tractor that was donated by a fellow HAS member and his wife.. I also asked for donations for a cover to put the Tractor under. An update - I am glad to report that the Observatory Committee received some more donations at the September meeting and at the HAS Picnic and that we have now achieved our goal of \$695.00. I want to say a BIG thank you for all of you that donated and that your donation letters will be in the mail soon.

A friendly reminder to all the Key Holders of the Observatory, when you took your training in the Observatory, you learned that part of the responsibility of having the key is that you will need to volunteer some time at the



HAS Members and guests enjoy the day at the observing site



With dinner eaten, it's time to set up the telescopes for a night of observing

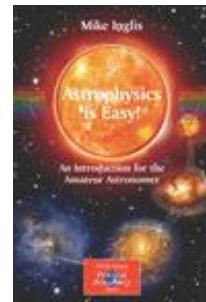
Astrophysics is Easy!

(An Introduction for the Amateur Astronomer)

by **Mike Inglis**
..book review

by Bill Pellerin, GuideStar editor

The title of the book that's the subject of this review tells it all... or, maybe not. The notion that astrophysics is easy doesn't sound right. Mike Inglis strives to prove that astrophysics can be discussed and learned by the amateur astronomer, and that, by learning about astrophysics, the amateur can enhance his or her enjoyment of the sky.



This volume, in the Patrick Moore Practical Astronomy series leaves out all the calculus (but not all the mathematics) in talking about the study of astrophysics and the components of the universe that can be better understood with an astrophysical background. After an introduction to the subject, the author devotes the remainder of the book to chapters on the interstellar medium, stars, and galaxies. Since this book is for the amateur astronomer, each chapter includes observing lists which allow the reader to see examples of objects that relate back to the subject matter. This is a great idea, if you ask me. The section on the color of stars contains a list of stars of various colors, including the Garnet Star (the Shallow Sky object in this month's *GuideStar*).

If you read this book, you'll understand why O-III filters can provide higher contrast views of various nebulae. On page 130, he says, "About 90% of their (planetary nebulae) light comes from the doubly-ionized oxygen line OIII, at wavelengths 495.9 nm and 5000.7 nm."

There's quite a bit of discussion of the H-R diagram which relates star color and luminosity. And the author has a lot to say about the lives of stars and how they begin and end their lives.

In some cases, terminology is introduced without prior explanation. On page 22, Inglis says that stars are mostly hydrogen and helium "and the remainder metals". He fails to explain that astronomers use the word 'metals' to mean any element heavier than helium. You may wish to supplement this book with other readings (such as a college level textbook).

Amateur observing requires an understand of the observed object to appreciate the view. This book can provide some of that understanding.

If you're ready to take a somewhat deeper dive into the study of how the universe works, and how we learn about the objects that comprise the universe, you might want to give this book a try. The book is only 200 pages and it sells for \$39.99, so it's not cheap. I suppose that the market for such a book is limited, so it's necessary to sell the book for more than the typical 'best seller'.

Observatory Corner...

from previous page

site for site duty. In the last couple of years, I have seen the same small group of people come out to the site to work. There are a lot of key holders that are not coming out and putting in their time. We have a couple of projects in the works for the fall when the weather cools down and I would like to see more key holders coming out to help with them. The more key holders that volunteer, the faster the work gets done and the less that everyone else gets burned out from doing all the work. So, please come out and put in your time. Of course, any member can volunteer to help at the site. I won't turn down anybody who wants to help.

Some dates of interest here for everyone. George Stradley, our Field Trip and Observing Chairman, has set the following 2007 Field Trip Schedule –December 1st. Keep an eye out on the Web site and here at the Observatory Corner for future updates for these Field Trips.

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

*Thanks,
Bob Rogers
Observatory Chairman*

Observatory Duty Roster

by Bob Rogers, Observatory Chairman

The site is in great shape thanks to the many, many volunteers who help maintain the site. Ed Fraini, Ken Miller, Dale Morningstar, and the site teams did a great job.

October Supervisor – Mike Edstrom – 832-689-4584

Volunteers:

Peyton Barnes, Jr.
Don Bates
John Blubaugh
John Chauvin
Art Ciampi
Brian Cudnik
Gary Delzer
Kay Sandor

Projects for October

Site Cleanup
Weed Eater Control
Field Maintenance

- Please volunteer to help us keep the site in great shape! Contact Bob Rogers with your desires and let him know of any special skills you have that the club could leverage. Thanks!

November Supervisor – Kirk Kendrick – 281-639-5088

Volunteers:

Kenneth Drake
Fred Garcia
Clif Goldman
David Herlinger
John Huff
Clayton Jeter
Keith Jurgens
Arnie Kaestner

- • • • • • • • • • • • • • •
- **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 Texas Star Party next year?
- Send your materials to Bill Pellerin,
- the GuideStar editor at:
- ***BillPellerin@sbcglobal.net***
- • • • • • • • • • • • • • •

December Supervisor – Ed Fraini – 979-236-5008

Volunteers:

David Kahlich
Daniel E Lambert
Howard Leverenz
Jay E. Levy
Doug McCormick
Robert C. Menius
Debbie Moran
Richard Nugent

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

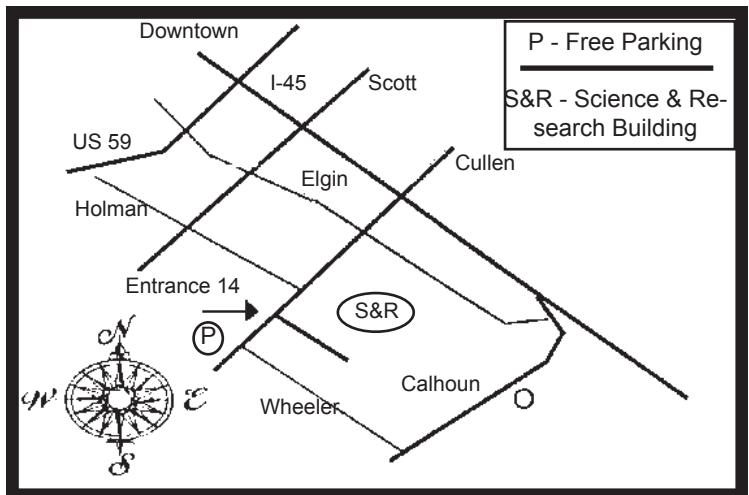
The Board of Directors Meeting is held on dates scheduled by the board at 7:00 p.m. at the University of St. Thomas. Information provided to GuideStar will be published. The meetings are open to all members of the Society in good standing. Attendance is encouraged.

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 Meeting on October 5, 2007

**7:00 Novice & Site Orientation
8:00 General Meeting**

University of Houston

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.**