

# GuideStar

March, 2009

*At the March 6 meeting...*

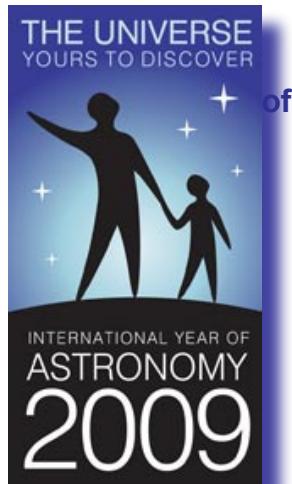
## Neutron Stars and Pulsars

**Dr. Matthew Baring, Rice University**

A neutron star is what is left after the collapse of a high-mass star following a supernova. As the name implies, the neutron star is composed of particles with no charge. These are very high density objects that compress as much as two solar masses into a sphere with a diameter of about 15 miles.

Very small objects, like this, can rotate quickly (due to the conservation of angular momentum).

Pulsars are neutron stars that rotate in such a way that a stream electromagnetic radiation from the star sweeps over the Earth at regular intervals. One of the well known pulsars is in the Crab Nebula.



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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.  
*Bill Pellerin - "Science and the Amateur Astronomer"*

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  
Vice Pres: Ken Miller .....H: 936-931-2724  
Secretary: Open  
Treasurer: Bill Flanagan .....H:713-699-8819  
Past President: Steve Sartor .....

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Don Pearce.....713-432-0734  
Doug McCormick.....  
Alan Grissom.....  
John Missavage.....

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Education ..... Richard Nugent .....  
Field Tr./Obsg ..... Mike Edstrom ..... 281-347-7267  
Novice ..... Justin McCollum .....  
Observatory ..... Bob Rogers ..... 281-460-1573  
Program ..... Brian Cudnik .....  
Publicity ..... John Missavage .....  
Telescope ..... Bram Weisman .....  
Welcoming ..... Susan Bruneni .....

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Librarian ..... Peggy Gilchrist ..... 281-443-8773  
Logo Mds Sales ..... Judy Dye ..... 281-498-1703  
Long Range Plan ..... Bill Leach ..... 281-893-4057  
Parliamentarian ..... Kirk Kendrick ..... 281-633-8819  
Publ. Star Party ..... Richard Nugent ..... 713-524-1993  
Rice U. Coord ..... Matt Delevoryas ..... 713-666-9428  
Schedule Obs'v'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.

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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 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: [www.jscas.net](http://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](mailto:bill.leach@nhmccd.edu). Web site: [www.astronomyclub.org](http://www.astronomyclub.org)

# March/April Calendar:



Photo by Scott Mitchell

## Date Time Event

### March

1	6:00 p.m.	Mercury 0.59 deg SSE of Mars
4	1:45 a.m.	Moon at first quarter
6	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
8	2:00 a.m.	Daylight Savings Time begins, set clocks forward 1 hr.
	3:00 p.m.	Saturn at opposition
10	9:37 p.m.	Full Moon
18	12:49 p.m.	Moon at last quarter
20	5:45 a.m.	Vernal equinox
21		Prime Night, Columbus Observing Site
26	11:07 a.m.	New Moon
28		All Clubs Star Party, Columbus Observing Site

### April

2	9:33 a.m.	Moon at first quarter
3	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
9	9:55 a.m.	Full Moon
15	4:00 a.m.	Mars 0.43 deg SSE of Uranus
17	8:38 a.m.	Moon at last quarter
19		Texas Star Party begins
22		Lyrid meteors peak
25	10:23 p.m.	New Moon
26	3:00 a.m.	Prime Night, Columbus Observing Site
		Mercury at greatest elongation east
30	5:00 p.m.	Texas Star Party ends
		Mercury 1.4 deg S of center of Pleiades

Send calendar events to Doug McCormick  
- [skygazer10@sbcglobal.net](mailto:skygazer10@sbcglobal.net)

Check the web site:

[www.astronomyhouston.org](http://www.astronomyhouston.org)

Webmaster: Kay McCallum

[kaym@mcclibrary.net](mailto: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](mailto:kaym@mcclibrary.net).

## Columbus Field Trips 2009

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**Mike Edstrom**

**Field trip/Observing committee chair**

**The schedule is as follows:**

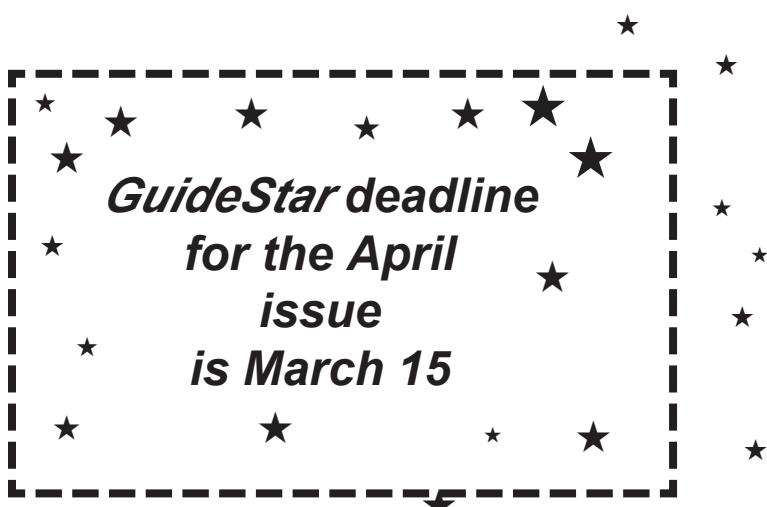
-March 28 - All clubs BBQ

-May 23 - All clubs BBQ

-September 19 - Annual picnic / all clubs/BBQ

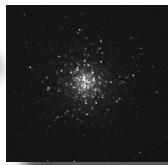
-October 17 - All clubs BBQ

-December 19 – HAS Observing



# *Observations... of the editor*

by Bill Pellerin, GuideStar Editor



## My Personal Observatory

Richard Nugent will be conducting a session at a future HAS meeting on the topic of 'personal observatories' and I've been asked to participate.

I'm an observatory owner in transition -- it's not a personal transition, it's a transition from one observatory to another. For the last 12 years, I've had a 6' (diameter) Home Dome that I installed on a small wooden platform of my own design and construction. I say that it was "of my own design" not out of pride, but simply to let you know that I built it myself. All told, though, the observatory provided excellent service for those years, and I have no complaints about it. The dome did what it was expected to do -- it rotatated, it opened and closed, and it blocked stray light. It allowed me to make many variable star observations and many other observations as well.

The dome is gone now, and what's left are the support posts for the deck and the telescope pier. What's coming is a roll-off roof observatory that will provide me with considerably more floor space and allow the installation of an equatorial mount with room to spare. It's not built yet, and with the complications of having a roof that rolls off I'm having it built by a homebuilder based on plans from SkyShed (SkyShed.com). It'll look like a small shed rather than an observatory, but it'll be open to the sky when the roof is rolled off.

The main reason that I'm updating my observatory is that the 6' dome is too small for some things I want to do. If you put a German equitorial mount in a 6' dome, there's very little space left to move around (you'll have to take my word for it on this). So, I wanted a larger space. A larger dome gets very expensive, so the



*The Home Dome - now gone*



*Ready for the next thing!  
Note the pier in the middle*



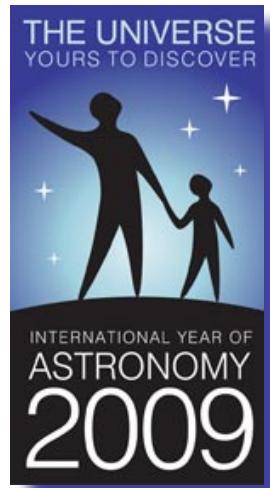
*Somebody else's roll-off roof observatory  
based on SkyShed plans from SkyShed.com*

alternative of a roll-off roof was my choice. A dome blocks stray light, and keeps dew under control (less heat radiates from the telescope so it stays above the dew point longer); a roll-off roof observatory is cheaper per square foot of floor space and gives you a wide open view of the sky (more of a feeling of being outside, under the stars). Any associated dewing issues can be managed with dew heaters, available from various vendors.

In any case, I'll go from about 45 square feet of floor space to about 80 square feet. I'll let you know how it works out.

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

*..Bill*



# Observatory Corner

By Bob Rogers, Observatory Chairman



Hello everyone.

On February 7<sup>th</sup>, HAS members Ed Fraini, Dana Lindstrom, Lee & Ginger Gibson, Dale Morningstar, Paul McCallum, Bruce Flagg, and Marty Levine and the boys and adults of Scout Troop 404 came out to the site to work on a couple of projects. The first project was the framing out of the Tractor shed to have the Garage door installed. Helping Ed Fraini on the framing was Dale Morningstar, Dana Lindstrom, Paul McCallum and Lee Gibson. The framing was completed after lunch. A job well done by all involved. Also, James Jones (Troop 404) and his son Cody Jones installed lights and electrical service to the Tractor shed.



*Framing the tractor shed to allow the installation of a garage door. (right and below)*



The other project was the clearing of brush from the North fence line for fence replacement due to take place this Fall

(we hope). Helping the Scouts on this project were HAS members Bruce Flagg, Marty Levine



and Ginger Gibson. A job well done by the Scouts and HAS members.



The Boy Scouts cooked hotdogs for lunch and for dinner was brisket, sausage, chicken, baked beans and potatoes and for dessert was the troops famous cherry, apple and peach cobblers. The food was great. In the afternoon, the Scouts set up a zip line in the picnic area for all the kids to have fun on. It

*Continued ...*

## ***Observatory Corner... from previous page***

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was a great hit with everyone. Afterwards, the Observatory was opened for everyone to view M42, some Open Clusters, Saturn and finally the almost full Moon.

I would like to thank the members of Troop 404 for all their help at the site.

- **Scouts** – Arthur Amick, Emily Amick, Jonnathan Delgado-Ramos, Cody Jones, Ben Muthalay, Maverick King and Matt King.
  - **Adults/Siblings** – Keri King/Chrisann & Calvin, Chris King, Matt Hedrick, Annette Ramos, David Haviland, James Jones, Rosemary Epperson and Scout Master Phil Amick.
- 

## ***Gate Combination Change***

A note to everyone, the gate combination at the Observatory site will be changed on April 4<sup>th</sup>, 2009. Make sure that you have paid your dues by March in order to get the new combination. I will start passing out the new combination at the January, February and March meetings using the database that Treasurer Bill Flanagan will provide me showing current paid members.

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 roles 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*





## Don Weinell - Kisatchie Star Party

This month's interview takes us to our neighboring state of Louisiana. Earlier this year, I had a wonderful experience, star gazing from the annual Kisatchie Star Party. The star party host and coordinator there is Don Weinell, a member of the Baton Rouge Astronomical Society. This amateur astronomer goes out of his way to make you feel at home. He is usually found throughout the day (and night) roaming the observing field making sure that everyone is enjoying themselves.



Don Weinell

I really love the dark skies at this event and especially the wonderful amateur star gazers there. All are overly nice and friendly. The evening meal served every night is outstanding too... you have to love Cajun cooking though!

I know you'll enjoy hearing about Don and his star party. Here he is...

I am originally from Shreveport, LA. The first real telescope I can remember looking through was at the Worley Observatory south of Shreveport when I was in high school. I had a casual interest in astronomy, but never really pursued it as a hobby until much later. After high school I got a bachelors degree in Biology and a commission in the Army. I spent 3 years on active duty and then returned to graduate school. I got my masters in biology and started towards my PhD. After a year in the doctoral program at the University of Arkansas, I bailed out and took a job teaching biology at a junior college in Alabama. I was still in the Army reserve and shortly after starting my teaching job, I was called back to duty for Desert Storm.

When I got back from my Army duty, my teaching job had disappeared, so I returned to Louisiana and took a position as an environmental scientist with the Louisiana Department of Environmental Quality. I've been with the agency for 17 years now. In 1996 I resigned my Army commission and never intended to put on another uniform. That changed after 9/11. I eventually decided to enlist in the USAF Reserves and now serve part time as a C-130 crew chief in the Hurricane Hunters.

As is often the case, I rediscovered my interest in astronomy as my sons became interested. When comet Hale-Bopp was all the rage, I took my sons to a public star party held by the Baton Rouge Astronomical Society. They were fascinated, and I caught their enthusiasm. Now, of course, at 15 and 17, they are more interested in celestial bodies of a different sort, but I still enjoy a night under a dark sky with a telescope. After rediscovering astronomy with my kids in 1997, I gradually found my way to the Baton Rouge Astronomical Society. I started going to the weekly stargazes at the Highland Road Observatory. I bought an Edmund Scientific "Astroscan" and also began plotting my own construction of a Dobsonian. Eventually I built an 8" f/7 Dob out of oak. I've always enjoyed woodworking, so a Dob is actually a fairly easy project.

I began attending some of the nearby star parties at Percy Quin, MS, French Camp, MS, and Mt. Magazine, AR. I felt that the Baton Rouge Astronomical Society should also get into the act.

When we decided to go through with it, we came up with several factors we wanted to play into our final site choice. First, we wanted the site to be centrally located in Louisiana. Secondly, we wanted it to be on public land so as to avoid liability issues. And finally, we wanted to have the absolute darkest skies possible.

I visited a number of state parks, state wildlife areas, and national forests. We finally found the site at Kisatchie that seemed ideal for what we wanted. The US Forest Service was very enthusiastic about our plans.

In 2001, we held the first Kisatchie Star Party. That year we had over 120 people in attendance. The remoteness of the site has

*Continued ...*

## ***Just Looking... from previous page***

caught a lot of people off guard. The encouraging fact is that we have a high rate of return attendance. We have developed a very loyal following. Some people say KSP is their favorite star party because it's almost like a family reunion. Luckily, all of our family seems to get along very well.

The Don Weinell interview...

**Clayton:** Welcome Don to our monthly interview column here in the *GuideStar*. It's a pleasure for me to introduce you to the HAS membership. Let me start off by saying that you are a wonderful star party host. You certainly have the knack for running this kind of event.

In your Bio above, you mentioned that the Kisatchie Star Party has a real family-style feel to it. I totally agree. I picked up on that too. I have made two of your parties in the past and enjoyed the observers there as much as the dark skies. Why do you think this star party is so folksy as compared to others?

**Don:** I think the main reason KSP people are so friendly towards one another is that there are no other distractions. We've done away with scheduled activities such as guest speakers, seminars, door prize drawings and so forth. Instead, our guests have time to actually relax and visit. For many of us, we've known each other for quite some time, but we live far enough apart that we only get together for special events such as KSP.

**Clayton:** KSP serves great food! Who is the generous hearted gentleman that prepares those wonderful tasty dinners every evening at KSP for everyone (grilled sausages and burgers, Gumbo, homemade chili, Shrimp Fettuccini, hotdogs, etc)? This guy can cook!

**Don:** Since the very first KSP, food has been an important factor. In Louisiana, food is as much a part of our culture as anything else. For whatever political, social, or economic problems we may have, no one can argue that if you go hungry in Louisiana, it's your own fault.

Until the last couple of years, KSP organized a "pot luck" dinner where each participant brought something, anything, to the table. During the last two years, Norm Ryan has (thankfully) taken it upon himself to raise the culinary bar. Norm has dual citizenship in the Baton Rouge Astronomical Society and the Pontchartrain Astronomical Society. He is an excellent cook, and a lot of the "folksy" feel of KSP is due to the communal meals he provides. As a matter of fact, I'm reasonably sure at least one of the PAS members would have starved to death at Kisatchie if not for Norm.

**Clayton:** That is one beautiful 8" Dob that you designed and built. Do you have any plans for upgrades or modifications to

it or even possibly moving up to a larger size scope?

**Don:** I'm pretty much a minimalist when

it comes to astronomical equipment. I have only three eyepieces and I've never really felt the need for more. I consider myself a serious casual observer. I like to look through my scope for a couple of hours at a time, but

inevitably I still end up stretching out in my chair and just soaking in the view. I'm not a religious person, but if there is such a thing as spirituality, it must surely be experienced best by pondering the infinite universe on a clear dark night.



As for a larger scope; no. If anything, I'll probably downsize. Telescopes are like boats. The bigger they are, the less you use them. When I retire (someday) and become a full time adventurer, I'll probably invest in a high quality refractor or a great pair of astronomical binoculars.

**Clayton:** Ever ponder the idea of moving the KSP to a different month of the year? How about two KSP's per year?

**Don:** Almost all star parties are squeezed into the same twelve weekends each year; the new moon weekend of each month. There are already nearby star parties in February, April, and May. Summers and star parties don't go well together in Louisiana due to the heat, humidity, and bugs. The Deep South Regional Star Gaze is in October, so we feel that one KSP a year is plenty.

*Continued ...*

## ***Just Looking... from previous page***

**Clayton:** I know you're quite busy with your job, not counting buzzing around in an Air Force C-130. Do you really have much time to look up and observe? You seem to be quite busy.

**Don:** As I'm typing my replies to your questions, I'm on my way to Qatar for six weeks. I do stay busy with the Air Force Reserves, but luckily I'm not away from home for long periods of time. Unlike the other branches of the military, we don't drop our people off somewhere remote and leave them for 18 months. I may go more frequently than my counterparts in the Army or Marine Reserves, but my civilian life is not completely abandoned. Lately I've been averaging about one week of duty each month. I still have time for my family, my civilian job, and my hobbies such as astronomy.

**Clayton:** I remember on my flight from Houston to Germany last year, while peeping out the window over far north-east Canada, I saw the sun set... then a bit later, I saw it popping back up as we were jetting to Europe. Have you ever tried any visual observing of celestial objects or seen anything unusual while flying from your cargo plane?

**Don:** A C-130 shakes and rattles a bit more than a commercial airliner. I can look out the windows at night, but using binoculars or a telescope would be impossible. I fly on the newest incarnation of the C-130 known as the C-130J. All of the previous models of the C-130 had a port on the roof of the flight deck in which the navigator could poke a sextant through and find his position with celestial navigation (if all his other instruments failed). With advances in GPS technology, most of the new C-130Js don't even have a navigator, much less a sextant.

One unusual atmospheric condition we see on rare occasions is a circular rainbow around the shadow of the aircraft. Everything has to be just right to observe this. The airplane

has to be at a specific angle to the sun; there has to be a layer of clouds at the right level below the plane to see a shadow, and there has to be enough water vapor in the air



to create a refraction around the shadow. I was told that this effect is called a "Glory Rainbow". I was fortunate to capture this in a photo once...

**Clayton:** I noticed reading in your Bio that you had an "Astroscan" rich-field telescope. Do you still have that instrument? I own one and love its wide-field vistas and its ease of

use. What are your overall thoughts on this portable little red scope?

**Don:** I still have my Astroscan. It is a great little scope. The only drawback is the sighting device. I replaced the open sight with a Rigel red dot finder. That completely solved the problem.

The Astroscan is perfect for families with kids that want to use a scope. It's wide field, so it's easy to find what you're looking for. The thing is practically indestructible. I can't tell you how many times mine has been dropped.

I said that I still have it, but actually my oldest son took it with him to school. He attends a resident high school in Natchitoches, LA. He and his friends like to go out onto the soccer fields by his dorm and stargaze from time to time.

**Clayton:** Just for fun, let's say you just won a gift certificate for \$800 from an astronomy vendor at a recent star party that you attended. What would you order?

**Don:** I think I might just buy gas so I could go to another star party! Actually, I'd like to buy a nice binocular mount and a green laser pointer for public star parties.

**Clayton:** Do you have an amateur observing mentor?

**Don:** Not really. Sadly, in our club, there are not a lot of folks that go out on a regular basis to observe. Most of what I know about astronomy I've learned from reading or from talking to people at star parties.

**Clayton:** OK... as we have read, we now know that you're Mr. Kisatchie Star Party. So what would you like to convey to the Houston Astronomical Society about this star party in Louisiana to get them pumped-up to visit there next year?

*Continued ...*

## ***Just Looking... from previous page***

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**Don:** Don't wait too long to join us! We have one of the darkest observing sites within a reasonable drive of Houston, but I feel our days are numbered. The site, unfortunately, is adjacent to a dirt pit that continues to grow. The US Forest Service has always been very supportive of our annual star party, but they also support the year round removal of dirt and gravel from the site. In the past 8 years, almost half of our field has been hauled off. I hope to locate another suitable site in the near future, but I honestly don't know if that will be possible. In an area as large as the Kisatchie National Forest, you would think that a few acres could be set aside for such a non-evasive activity as ours. As of yet, though, I haven't found the right replacement site. I fear we only have a couple of years left at our current spot.

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

**Don:** I think amateur astronomy as we now recognize it will no longer exist. In the short time that I've been involved with the hobby, drastic changes have occurred. Technological advances have changed the hobby from an active to a passive pursuit. With go-to capabilities, a newcomer can bounce from one dim fuzzy to another with the push of a few buttons. It's as easy as changing channels on the TV. For most amateurs in the past, the appeal of astronomy has been not in viewing the object so much as hunting for the object. The thrill of the hunt is what kept us challenged. If young astronomers can dial up all of the Messier Objects in one night without any real challenge, how long can we expect most of them to stay interested? In today's fast paced media world, attention spans are already significantly less than they were a couple of decades ago.

Right now, astro-imaging is having somewhat of a revival. Digital photography has made possible shots that were only dreamed of when I was a kid. But in the near future, people will probably grow tired of this too. Why spend the time and money taking your own pictures when the internet is already flooded with more pictures than anyone really cares to look at? The shock and awe phase of astrophotography has come and gone. Only the most serious astronomers will continue to take their own pictures.

Don't get me wrong, I don't believe amateur astronomy will go away. I just don't think we will recognize it in 25 years. It will be even more technical than it is now. We will be able to see things we don't even know exist yet. Communal star parties, however, may be replaced by on-line social networking astronomy clubs and remotely operated time share telescopes.

As for me, I'll still be out somewhere, sitting in my reclining chair, soaking it all in.

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

**Don:** Buy a good book, a planisphere, a decent pair of binoculars, and a reclining camp chair. Learn your way around the constellations. Find the big stuff, and work your way down to the smaller objects. Once you are comfortable moving around the sky, and then buy your first telescope. Don't get in a hurry, the stars will wait for you. If they don't wait, amateur astronomy is the least of your concerns.

**Clayton:** Is there an email address that a HAS member could contact you for a question or two?

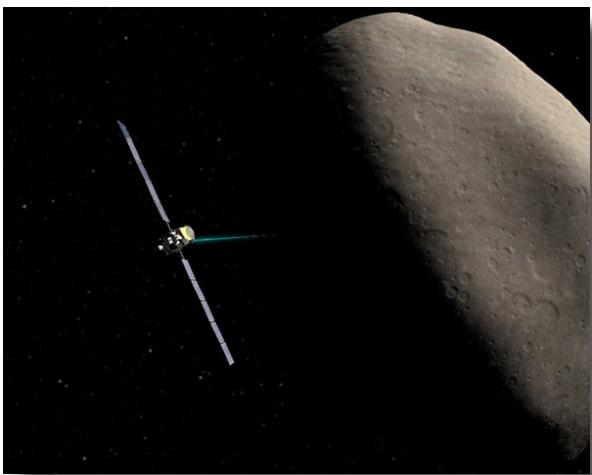
**Don:** Anyone can reach me at [kisatchie@cox.net](mailto:kisatchie@cox.net). I'm not always able to check my e-mail daily or even weekly, but sooner or later I'll get to an internet connection to reply.

**Clayton:** Thanks Don 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 when in the Houston area, we'd love to see you. Clear skies, always.

# **Where Did All These Gadgets Come From?!**

**I**on propulsion. Artificial intelligence. Hyper-spectral imagers. It sounds like science fiction, but all these technologies are now flying around the solar system on real-life NASA missions.

How did they get there? Answer: the New Millennium Program (NMP). NMP is a special NASA program that flight tests wild and far-out technologies. And if they pass the test, they can be used on real space missions.



*Dawn will be the first spacecraft to establish orbits around two separate target bodies during its mission—thanks to ion propulsion validated by Deep Space 1.*

mission to Pluto, the Dawn asteroid-exploration mission, the comet-smashing probe Deep Impact, and others. Some missions were merely enhanced by NMP technologies; others would have been impossible without them.

"In order to assess the impact of NMP technologies, NASA has developed a scorecard to keep track of all the places our technologies are being used," says New Millennium Program manager Christopher Stevens of the Jet Propulsion Laboratory.

For example, ion propulsion technology flight-tested on the NMP mission Deep Space 1, launched in October 1998, is now flying aboard the Dawn mission. Dawn will be the first probe to orbit an asteroid (Vesta) and then travel to and orbit a dwarf planet (Ceres). The highly efficient ion engine is vital to the success of the 3 billion mile, 8 year journey. The mission could not have been flown using conventional chemical propulsion; launching the enormous amount

of fuel required would have broken the project's budget. "Ion propulsion was the only practical way," says Stevens.

In total, 10 technologies tested by Deep Space 1 have been adopted by more than 20 robotic probes.

**NASA's Space Place**

One, the Small Deep Space Transponder, has become the standard system for Earth communications for all deep-space missions.

And Deep Space 1 is just one of NMP's missions. About a half-dozen others have flown or will fly, and their advanced technologies are only beginning to be adopted. That's because it takes years to design probes that use these technologies, but Stevens says experience shows that "if you validate experimental technologies in space, and reduce the risk of using them, missions will pick them up."

Stevens knew many of these technologies when they were just a glimmer in an engineer's eye. Now they're "all grown up" and flying around the solar system. It's enough to make a program manager proud!

The results of all NMP's technology validations are online and the list is impressive: [nmp.nasa.gov/TECHNOLOGY/scorecard/scorecard\\_results.cfm](http://nmp.nasa.gov/TECHNOLOGY/scorecard/scorecard_results.cfm). For kids, the rhyming storybook, "Professor Starr's Dream Trip: Or, How a Little Technology Goes a Long Way" at [spaceplace.nasa.gov/en/kids/nmp/starr](http://spaceplace.nasa.gov/en/kids/nmp/starr) gives a scientist's perspective on the technology that makes possible the Dawn mission.

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

# *Volunteer Opportunity!!! Live Oak Festival - Columbus*

The town of Columbus is holding their annual Live Oak Festival the weekend of May 16 and 17th.

This is the city's Arts and Crafts festival with over 100 booths and 2,000+ attendees. Since the HAS is a member of the community, we should have a presence at the festival. We can hand out astronomy information, nightly sky charts, NASA photos, and information on light pollution from the International Dark-Sky Association. The focus of our booth would be to promote astronomy and help protect the night sky. And possibly have a solar scope to view the sun.

We are looking for volunteers to help gather material from *Sky and Telescope*, *Astronomy* magazine and NASA. This is similar to what we do for Astronomy Day. Also, we are looking for people to sit at the booth to handout the materials and answer questions.

If you would like to volunteer, please let us know at [SGoldberg124@comcast.net](mailto:SGoldberg124@comcast.net).

Regards,

*Steve & Amelia Goldberg*

## *Chairman*

Want Ads

**For Sale: Nexstar 5se**

**For Sale: Nexstar 5se**  
Nexstar 5se bought in June 07. Like new condition, barely used (bought a bigger scope): This is a great starter scope if you're new to the hobby!

Includes a Zhumell 1.25 Inch Eyepiece and Filter Kit and A/C power source. Still have all the original boxes. Asking \$550.00

Rick Hillier  
Call 713-875-6463 (cell)  
e-mail hillier\_rick@yahoo.com

## 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 half-way. 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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# **Adhara - Epsilon CMa**

**by Bill Pellerin, GuideStar Editor**

**Object:** Adhara - (Epsilon CMa)

**Class:** Star

**Magnitude:** 1.5

**R.A.:** 6 h, 58 m, 38 s

**Dec:** -28 degrees, 58 minutes, 20 seconds

**Distance:** 431 ly

**Constellation:** Canis Major

**Size:** (see text)

**Optics needed:** Naked eye to see the star; telescope to see the companion star

## **Why this object is interesting.**

When you look toward the constellation Canis Major (the big dog) your eye is captured by the dazzling light from Sirius, the brightest star in the night sky (see the December, 2008 *GuideStar*). If you look down, toward the horizon, from Sirius the 22nd brightest star in the sky comes into view. This one is called Adhara or Epsilon CMa. Being the second brightest star in the constellation, it should be beta CMa, but the naming of the stars is somewhat quirky and it ended up being epsilon, a label that should be associated with the 5th brightest star in the constellation.

To find this star, look for the triangle of bright stars below Sirius. The one to the right (as you view this from Houston) is Adhara. The name, Adhara, means 'virgin' and the small triangle of stars was called 'the virgins'.

Is Adhara bright enough to be included with the group of 1st magnitude stars? Not according to Fred Schaff, (*The Brightest Stars*) because the category of first magnitude stars includes those down to but not including those shining at magnitude 1.50. So, Adhara is generally considered to be the brightest of the 2nd magnitude stars, although others consider it a member of the 1st magnitude club.

You would think that the list of the brightest stars would be consistent everywhere you looked. Not so. Some of the bright stars are variable, so do you assume their brightness at the peak or at the minimum? What about multiple stars? Do you include the companion stars in determining the brightness of the star system? I am using Fred Schaff's list for this article, but not all lists agree.

In fact, Adhara is a high luminosity, class B (blue-white) star blazing away at 21,000 degrees Kelvin. It only looks dimmer on the sky than Sirius because it is so far away. If it were placed at the distance of Sirius it would shine at magnitude -7, much brighter than Sirius. Because Adhara is so hot it radiates a lot of energy in the ultraviolet. If you



could see in the ultraviolet, Adhara would be the brightest star in the sky. This star falls into the "live fast and die young" category, and is believed to have completed most, if not all, of its hydrogen burning phase.

While you can see Adhara easily as a naked eye object, what you can not see is that Adhara is joined by a companion star shining at magnitude 7.5 or dimmer, depending on your source of information. It sits at about 7.5 arc-seconds from the primary star, but seeing the secondary star will be something of a challenge owing to the brightness difference from the primary. I have not tried this one yet, so I can't recommend a telescope / eyepiece combination to you as you attempt this observation.

You will want to wait for a night with very steady air to see the secondary star. Unfortunately from our latitude, Adhara only gets about 31 degrees above the southern horizon as it crosses the meridian.

# ADVANTAGE

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### **Membership Renewals...**

Your membership is renewable on January 1 of each year.

Total yearly dues are \$36.

Your payment for 2009 is due as of January 1, 2009.

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 regularly, 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!**

### **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**

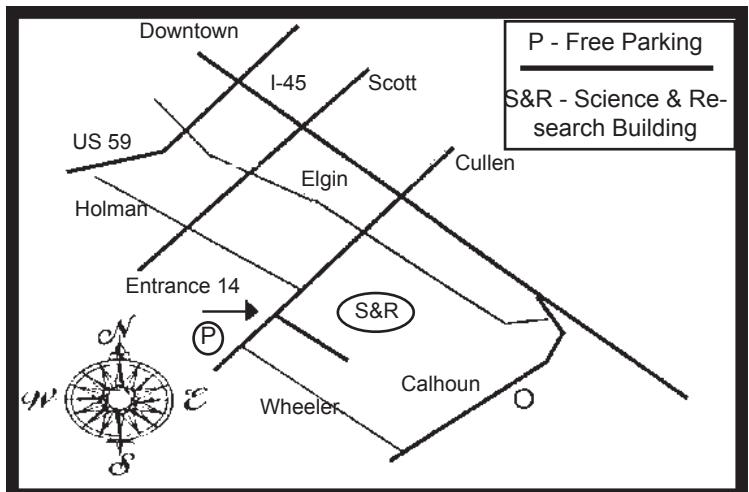
The Board of Directors Meeting is held on dates scheduled by the board at 7:00 p.m. at the Houston Chronicle office, downtown. Information provided to GuideStar will be published. The meetings are open to all members of the Society in good standing. Attendance is encouraged.

### **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.

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## **Houston Astronomical Society**

### **Meeting on Friday, March 6**

**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.**