



January, 2004

At the January 9 meeting...

NOTE: 2nd Friday

Brian Cudnik

Comet Hale-Bopp

*One of the best and brightest comets
in our lifetime*

Houston Astronomical Society

GuideStar

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.

★★★★★ **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: Steve Sartor H:281-370-3544 Treasurer: Bill Flanagan H:713-699-8819
Vice Pres: Bill Leach H: 281-893-4057 Past President: Kirk Kendrick .. H: 281-633-8819
Secretary: Brian Cudnik H: 832- 912-1244

★★★★★★★★★ **Additional Board Members** ★★★★★★★★★★

Liaison responsibility

Steve Goldberg 713-721-5077
Don Pearce 713-432-0734
JayLevy 281-557-4920 Field Trip and Observing, Program
Christopher Mendell 281-488-8906
Tessie Nolan

★★★★★★★★★ **Committee Chairpersons** ★★★★★★★★★★

Audit (open)	Program John Blubaugh
Education Richard Nugent 713-524-1993	Publicity Joe Khalaf 713-660-8219
Field Tr./Obsg. Kenneth Miller	Telescope Clayton Jeter 281-573-1337
Novice George Stradley 281-376-5787	Welcoming Susan Kennedy
Observatory Michael Dye 281-498-1703 Hannah Lange 832-715-7833

★★★★★★★★★ **Ad-Hoc Committee Chairpersons** ★★★★★★★★★★

Historian Leland Dolan 713-688-0981	Publ. Star Party Marg Nunez 713-529-2549
Librarian Peggy Gilchrist 281-443-8773	Rice U. Coord. Matt Delevorayas 713-666-9428
Logo Mds Sales Judy Dye 281-498-1703	Schedule Obs'v'ty Steve Goldberg 713-721-5077
Long Range Plan Bill Leach 281-893-4057	Texas Star Pty Steve Goldberg 713-721-5077
Parliamentarian Kirk Kendrick 281-391-3834	

★★★★★★ **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.

★★★★★★★★★ **Dues and Membership Information** ★★★★★★★★★★

Annual Dues: Regular ... \$33.00	Student \$5.00
Associate \$5.00	Honorary None
Sustaining . \$50.00	

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* mag \$29.95/year, *Astronomy* mag \$29/year -- see club treasurer.

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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Check the web site:

<http://www.astronomyhouston.org>

Welcome to New Members!

The Houston Astronomical Society encourages you to join our group of active amateur astronomers and take advantage of the benefits of membership. As a member you'll have access to the club observing site near Columbus, Texas. (You're required to participate in a site orientation meeting before you get the gate lock combination.) The site has concrete pads for setting up your telescope, restroom and bunkhouse facilities, and areas set aside for camping. You'll get monthly issues of the *GuideStar* newsletter, you'll get to vote and to serve the organization as an officer, and you will be supporting the local amateur astronomy community.

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
Occultations & Grazes ...	Wayne Hutchison	713-827-0828
Advanced	Bill Leach	281-893-4057

Observations... of the editor

by *Bill Pellerin, GuideStar Editor*

Leftovers...

By the time you read this, you're probably 'feasting' on holiday leftovers, while making resolutions for the new year.

There's a long list of things I'd like to do better in the new year, some of which are astronomical, some are not. Here's a list...

Observe more. Since I enjoy observing, and it's an optional activity, this seems like a no-brainer. There are times, however, when I miss an observing opportunity due to lethargy or my inability to put aside other activities in favor of spending time under the stars. There are plenty of good observing opportunities on a night that's less than perfect.

Get more exercise. This would seem unrelated to the previous item, but I think that the better shape I'm in, the better I'm able to enjoy my observing time. Observing involves hauling out and setting up equipment, having the stamina to stay up late (maybe all night), and having the agility to get my eye to the eyepiece even when it's in some weird position.

Develop new skills. There have been a number of ideas on my "I'd sure like to try this" list, but not many of them have been executed. This could be a good opportunity to try some new aspect of the hobby. For example, I'd like to do photometry and astrometry (measure the brightness and position of objects). I've done a little (very little) of this, and developing skills in this area would take some time.

You may want to try astrophotography, or have a goal of completing the Messier list, double star list or Herschel list. Having goals and a plan for reaching them will help move you in the direction you want to go.

Continued on page 13...

Houston Astronomical Society

***Meeting Notice
For Friday, January 9, 2003***

Brian Cudnik Comet Hale-Bopp

I have studied the great comet Hale-Bopp in great detail, much more so than any other comet that I've observed. My observations include over 75 visual observations and over 50 CCD and Photometric photometry observations. I have also photographed the comet with conventional 35-mm film. The comet served as my Master of Science thesis project, and I recently submitted a pair of papers to the journal Planetary and Space Science.

This evening, I would like to share some of the more interesting things I found about this comet, as I, along with a large number of scientists, probe the depths of this monster comet. I also want to briefly compare this comet to West, Halley, and Hyakutake, discussing what made these comets "great". Finally, I give some hints and suggestions for observations of the comet C2001 Q4 (NEAT), which may be the next great comet to grace Earth's skies.

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.

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

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

**See the inside back cover for a map
and more information.**

January/February Calendar:



Photo by Scott Mitchell

<i>Date</i>	<i>Time</i>	<i>Event</i>
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January 2004

4	11:42 a.m.	Earth at perigee
7	9:40 p.m.	Full Moon
9	7:00 p.m.	Novice Presentation - U of H.
	8:00 p.m.	General membership meeting U of H. Presentation by Brian Cudnik (title TBA)
14	10:46 p.m.	Last Quarter Moon
17		Prime Night-Columbus
21	3:05 p.m.	New Moon
24		Members Observatory Night - Columbus
29	12:03 a.m.	First Quarter Moon

February 2004

6	2:47 a.m.	Full Moon
	7:00 p.m.	Novice Presentation - U of H.
	8:00 p.m.	General membership meeting U of H. Presentation by Don Pettit
13	7:40 a.m.	Last Quarter Moon
14		Members Observatory Night - Columbus
20	3:18 a.m.	New Moon
21		Prime Night-Columbus
27	9:24 p.m.	First Quarter Moon

*Send calendar events to JBlubaugh@aol.com
or call 713-921-4275.*

So Little Time, So Many Galaxies

By Dr. Tony Phillips

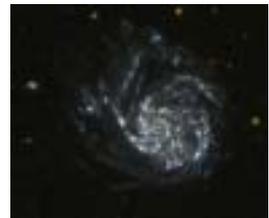
Fourteen billion years ago, just after the Big Bang, the universe was an expanding fireball, white hot and nearly uniform. All of space was filled with elementary particles and radiation. “Soup” is how some cosmologists describe it.



Today the universe is completely different. It's still expanding-even accelerating-but there the resemblance ends. The universe we live in now is “lumpy.” Great cold voids are sprinkled with glowing galaxies. In galaxies, there are stars. Around stars, there are planets. On one planet, at least, there is life.

How we got from there to here is a mystery.

Finding out is the goal the Galaxy Evolution Explorer, “GALEX” for short, a small NASA spacecraft launched into Earth orbit April 28, 2003. GALEX carries an ultraviolet (UV) telescope for studying galaxies as far away as 10 billion light-years.



M101
Pinwheel Galaxy

“GALEX is a time machine,” says astronomer Peter Friedman of Caltech. Because light takes time to travel from place to place, pictures of distant galaxies reveal them as they were in the past. “GALEX is investigating the evolution of galaxies over 80% of the history of our universe.”

The Hubble Space Telescope can see faraway galaxies, too, but GALEX has an advantage: While Hubble looks in great detail at very small regions of the sky, GALEX is surveying the entire sky, cataloging millions of galaxies during its 2-year mission.

GALEX is a UV mission for a reason. Friedman explains: “UV radiation is a telltale sign of star birth.” Stars are born when knots of gas condense

Continued....

Space Place... from previous page

in interstellar clouds. The ones we see best are the big ones-massive stars that burn hot and emit lots of UV radiation. "These stars are short-lived, so they trace recent star formation."

Understanding star formation is crucial to studies of galaxy evolution. When galaxies collide, star formation surges. When galaxies run out of interstellar gas, star formation wanes. In galaxies like the Milky Way, spiral arms are outlined by star-forming clouds. The shapes of galaxies, their history and fate \dot{S} they're all connected by star formation.

Even life hinges on star formation, because stars make heavy elements for planets and organic molecules.

"Our measurements of UV radiation will tell us both the rate at which stars are forming in galaxies and the distances of the galaxies," says Friedman.

How did we get here? GALEX will show the way.

Find out more about GALEX at www.galex.caltech.edu. For children, visit The Space Place at spaceplace.nasa.gov/galex_make1.htm and make a beautiful galactic mobile while learning about some of the different shapes galaxies can take.

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

Want Ads

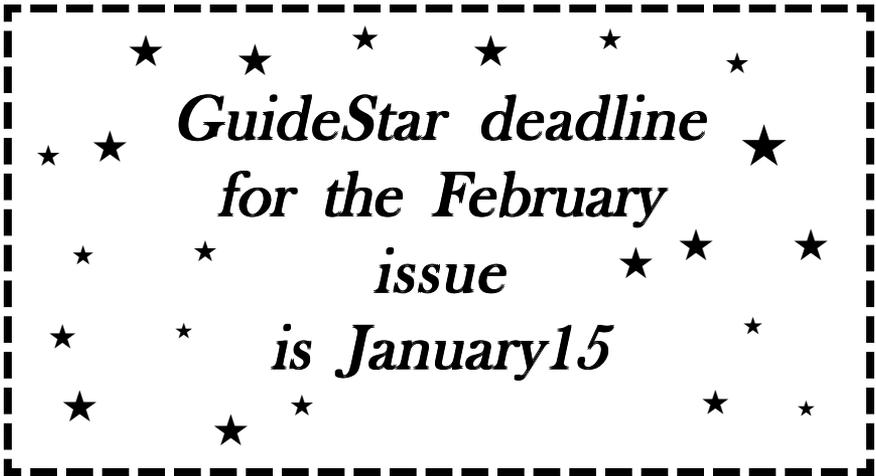
For Sale: LX-200 Classic, 8". Excellent condition with all original accessories. 2" diagonal, carry bag (telescope), hard case (accessories), \$1100. Call 713-880-8061, or email BillPellerin@aol.com

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.ghgcorp.com/cbr/jscas.html>

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



HAS 2004 Banquet

at
West Loop Marriott
1750 West Loop South @ San Felipe
Topaz Ballroom
February 7, 2004

Dr. David Alexander -- featured speaker
Topic: Space Weather

Agenda

6:30-7:30 *Registration & Cash Bar*
7:45 *Meal*
8:30 *Featured Speaker*

CLUB AFFILIATION: [] HAS [] FBAC [] NHAC [] JSCAS [] ASSET

Dinner choices

London Broil
Chardonnay Basil Chicken
Vegetarian Plate

Registration sheets will be at the next meeting.

Price of meals will be \$26.00 each. Make checks to:

Houston Astronomical Society
Attn: Judy A. Dye - CHAIRMAN
12352 Newbrook
Houston TX 77072-3910
281-498-1703
judyadye@aol.com

Committee Chairman: Judy Dye,
Committee Members: Michael Dye, Hannah Lange, Mary Lockwood

Houston Astronomical Society Annual Banquet

Name: _____
Address: _____
City: _____
State: _____ Zip: _____

Number of people in your party _____

HomePhone: _____ Workphone: _____

Club affiliation: HAS FBAC NHAC JSCAS ASSET

Names of persons in your party:	Choice of entrée:
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

Dinner choices (mark the number of each meal)

London Broil _____
Chardonnay Basil Chicken _____
Vegetarian Plate _____

Total number of meals: _____
Total Due: (# of meals x \$26.00) _____

Make checks payable to Houston Astronomical Society.

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

Dress Code: Business Casual to Semi-Formal

Membership Renewals...

Please check the mailing label on your copy of the *GuideStar*.

It'll tell you when your membership expires. If it expires soon, please send your renewal to the address on the outside cover of *GuideStar*. The dues information is on the inside front cover.

Membership in the Houston Astronomical Society is one of the great bargains in Astronomy. For a regular membership of \$33 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.

Thanks!

February Meeting --

Don Pettit, International Space Station astronaut will provide us the other side of the story of space photography from the November 2003 meeting.

The title of his talk is:

Astrophotography from the ISS Part II

Observations... from page 4

Do more to help the HAS. The Houston Astronomical Society is a volunteer organization that depends on the donation of time and effort by its members to do the work that's essential to keeping the Society going. We're a diverse organization and many of us have highly-developed professional skills that can help. How 'bout it? Plenty of opportunities await you.

On other subjects...

We all need to express our gratitude to our outgoing officers, particularly Kirk Kendrick, who has been our president most recently. It's mostly a thankless job, and it's one that Kirk was able to fit into his work and family schedule.

The banquet is coming up. See the announcement in this *GuideStar*. It'd be fun to see you there, so make it easy for the organizers by signing up early.

Do you have anything for the *GuideStar*? I'd like to have it if you do. Thanks to all the contributors this year including Brian Cudnik, Don Pearce, Leland Dolan, and others. Our regular contributors, Michael Dye and John Blubaugh deserve a word of thanks as well.

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

..Bill

Continued....

Observatory Corner



By Michael B. Dye Observatory Chairman



As of the date I am writing this article, a date for the Annual Observatory Meeting has not been set. It is now a little late to use December, so most likely the meeting will be in early January. When the date is set the meeting will consist of a review of the previous year's (2003) accomplishments or failures, going over goals for 2004 and a walking tour of the Observatory Site. The meeting will start about 2 PM and shouldn't last more than 3 to 5 hours (including the walk). Members are

invited to come observe and participate. I will try to have the meeting announced on the HAS web site. If you are interested, please contact me.

The following are the dates for Prime Night, Members Observing Night, New Moon and Full Moon for 2003. The New and Full Moon dates are plus or minus 1 day as I did not bother to check to see if the dates were corrected to Central Standard (or Daylight) Time. I used the US Naval Observatory web site for the dates. The Prime Night and Members Observatory Night dates were generated as a result of some compromises between Matt Delevoryas and myself.

Month	Prime Night	Members Night	New Moon	Full Moon
Jan	17	24	21	7
Feb	21	14	20	6
Mar	20	13	20	6
Apr	17	10	19	5
May	15	8	19	4
Jun	19	12	17	3
Jul	17	10	17	2 & 31
Aug	14	7	16	31
Sep	11	4	14	28
Oct	16	9	14	28
Nov	13	6	12	26
Dec	11	4	12	26

Continued....

Observatory Corner... from previous page

The good news for next year is that the Observatory Committee will have six Site Supervisors. Last year we had Don Selle join as a new Site Supervisor and this year we had everyone stay on and gained one more Site Supervisor in the form of Preston Engebretson. Ed Szczepanski and Bob Rogers will continue to do a great job of maintaining the pad area and picnic/camping area grass. Bob also performs the continuing maintenance on the Site Riding Lawn Mower. The line up for the Observatory Committee for 2004 looks likes this:

Michael B. Dye	Chairman MBDye@aol.com
Kirk Kendrick	Vice Chairman
John Hiatt	Advisor
Matt Delevoryas	Site Supervisor
Preston Engebretson	Site Supervisor
Allen Gilchrist	Site Supervisor
Logan Rimes	Site Supervisor
Robert Rogers	Site Supervisor
Don Selle	Site Supervisor
Edward Preston	Financial Records
Steve Goldberg	Scope Assignment
Ed Szczepanski	Grounds Keeper

The Society continues to benefit from members who shop at Randalls and now Kroger's. For this we (the Society) thanks you. Please link your Randalls card to the Houston Astronomical Society so that the society can benefit from the 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 what to do. If you shop at Kroger, we now have a card available (at the General Meeting) that you present at the cash register when you check out. We can thank Joe Khalaf for his efforts in getting the cards.

Please fill out the appropriate log form when you use the site.

Remember we use these forms as attendance records and to report Observatory Site problems such as broken toilets.

For H.A.S. Logo merchandise, call:
Judy Ann Dye - 281-498-1703

Observer's Handbook

The 2004 issue is NOW available. (\$20)

A full year of observing activities in one book. No astronomer's bookshelf should be without it!

Hooded Sweatshirts

Sizes available: M, L, XL, XXL

Check with Judy for current prices. These are made from heavy sweatshirt material and were very popular at the previous meetings. If you want one, come to the meeting -- cash and checks accepted.

Other books available:

Observe the Herschel II Guide \$17.00
Observe and Understand the Sun \$14.00
Astronomy, The Teachers Handbook \$12.00
ALPO's Mars Observer's Handbook \$12.00
Observe Variable Stars \$17.00
Observe Eclipses \$17.00

Special "Help" Volunteers

Any member who wants specific information on a subject listed below may call the individual listed. If you have a moderate knowledge of a special subject and would be happy to have others ask you about that subject, let the editor know and your subject, name and phone will be listed in *GuideStar* in the future. Note that we have listed a few possible areas where you might volunteer, but, of course, you are not limited to these. You can also have a specialty which is a sub-group of another. Note that the number of names for any subject is not limited to only one person. Also see the "Ad Hoc Committee Chairpersons" on the inside front cover and the "Special Interest Groups Listing article.

Subject	Name	Phone
Asteroids	Barbara Wilson	281-933-1289
Astrometry	Richard Nugent	713-910-5945
Astrophotography	Steve Goldberg	713-721-5077
Beginning in Astronomy	Peggy Gilchrist	281-443-8773
	Amelia Goldberg	713-721-5077
Comets	Kenneth Drake	281-367-1592
	Don Pearce	713-432-0734
Computers	Matt Delevoryas	713-795-0808
	Leland Dolan	713-688-0981
	Ricardo Palmeira	713-669-1409
Cosmology	Ricardo Palmeira	713-669-1409
Deep Sky	Larry Mitchell	281-448-8700
	Barbara Wilson	281-933-1289
Double Stars	John Blubaugh	713-921-4275
Drawing (Sketching)	Scott Mitchell	713-461-3020
Herschel Objects	Larry Mitchell	281-448-8700
History, Astro'y - General	Leland Dolan	713-688-0981
	Ricardo Palmeira	713-669-1409
History, Astro'y - Amateurs	Tom Williams	713-526-2868
Mathematics, Astronomical	Richard Nugent	713-910-5945
Messier Objects	Novice Committee (see inside front cover)	
Photometry	Open	
Radio Telescopes	John Hiatt	713-464-4010
Satellites, Artificial	Open	
Solar Observing	Larry Mitchell	281-448-8700
Spectroscopy	Open	
Thin Crescent Moons	Don Pearce	713-432-0734
Telescopes	Clayton Jeter	281-573-1337
Variable Stars	Barbara Wilson	281-933-1289
	Tom Williams	713-526-2868
Video	Larry Mitchell	281-448-8700

Observatory Duty Roster

by Michael B. Dye, Observatory Chairman

This is the duty list for January, February and March. If you are listed in this roster, please be sure to contact your supervisor for any information that you may need and the date and time to be at the site. You may change from site duty to open house or from open house to site duty by pre-arrangement with the Site Supervisor for that month. Changes between months require Observatory Chairman coordination.

**January Supervisor Robert Rogers 281-460-1573
(New Number)**

John Blubaugh	Site		
Ken Carey	Members	Observatory Night	01-24-04
John Chauvin	Members	Observatory Night	01-24-04
Brian Cudnik	Members	Observatory Night	01-24-04
Gary Delzer	Site		
Kay Sandor	Site		

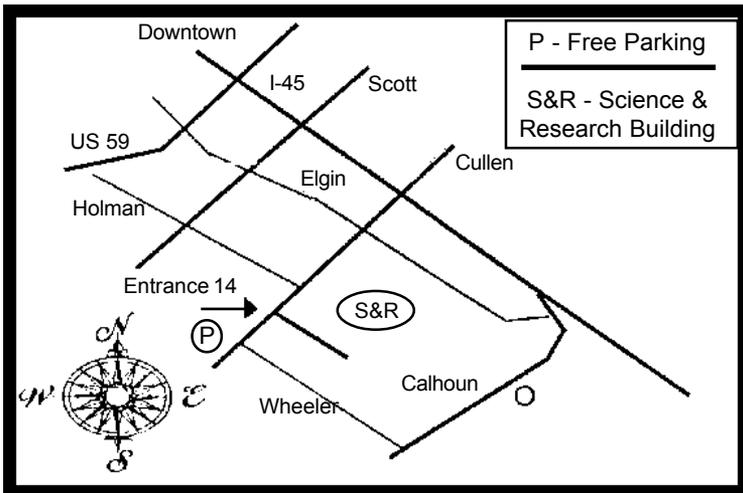
**February Supervisor Robert Rogers 281-460-1573
(New Number)**

George Dolson	Site		
Kenneth Drake	Members	Observatory Night	02-14-04
Victor Flores	Members	Observatory Night	02-14-04
Fred Garcia	Members	Observatory Night	02-14-04
David Herlinger	Site		
Bob Menius	Site		

March Supervisor To Be Announced xxx-xxx-xxxx

Wayne Hutchinson	Site		
Clayton Jeter	Members	Observatory Night	03-13-04
Stanley Jones	Members	Observatory Night	03-13-04
Keith Jurgens	Members	Observatory Night	03-13-04
Arnie Kaestner	Site		
David Kahlich	Site		

Please remember that Site work can be done anytime and does not have to be done just before Members Observatory Night. Contact your Site Supervisor for details. Names are selected for Site Duty using the current Alphabetical listing for Observatory Key Holders. If any member knows of a conflict please call me before your name is listed.



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 sent via bulk rate mail to Regular, Student, and Honorary Members of H.A.S., selected individuals and recent visitors to the General Membership Meeting. Contributions to *GuideStar* by members are encouraged. Electronic submission is helpful. Submit the article in ASCII text, MS-Word (preferred), or WordPerfect format via email BillP10566@aol.com. Copy must be received by the 15th of the month for inclusion in the issue to be mailed 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: Billp10566@aol.com

Reproduction and Mailing: Anne Hallman & Hannah Lange

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Houston Astronomical Society

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