



December, 2003

At the December 5 meeting...

***Comets:
Their Origin and Fate***

***Don Pearce
Past President, H.A.S.***

***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: Kirk Kendrick H: 281-633-8819 Treasurer: Debbie Moran H: 713-666-9428
 Vice Pres: Bill Leach H: 281-893-4057 Past President: Don Pearce H: 713-432-0734
 Secretary: Brian Cudnik H: 832- 912-1244

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

Bill Flanagan 713-699-8819	Liaison responsibility
Don Pearce 713-432-0734	Telescope Loaner Program
JayLevy 281-557-4920	Field Trip and Observing, Program
Christopher Mendell 281-488-8906	
Steve Sartor 281-370-3544	

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

Audit Matt Delevoryas 713-666-9428	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 Marg Nunez 713-529-2549
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 Delevoryas 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*

I've been an amateur (ham) radio operator since high school (many, many years ago). Like astronomy, ham radio has a large collection of sub-interests (contests, antennas, electronics design, digital communications, and so forth).

One of the sub-interests is called 'QRP', which means that the operator uses a low power transmitter, usually just a few watts or less, to see what communications are possible. QRP operators enjoy knowing that they've established communications with some far-away land using very low transmitter power.

I have operated using low power transmitters over the years, and enjoyed it, so it may not come as a surprise for me to tell you that the telescope I use most often has only a 4" aperture. It's a very nice instrument, and the image quality is superb, but by most amateur astronomer's standards, it's quite small. Using a small telescope for astronomy is similar to using low power for radio communications. The idea is, "Let's see what I can do with this setup."

So.... here are the advantages of small aperture astronomy:

- The equipment is easy to transport, set up and take down. Nothing in my configuration weighs so much that I can't easily handle it myself. And, it all fits in the back of my small SUV with plenty of room to spare.
- While you're giving up aperture, you may be able to get image quality improvements for the same cost. This represents a huge improvement in the enjoyment of performing the observations. During a short period of outstanding seeing at this year's Texas Star Party I got a view of Jupiter that was just the best ever.

Continued on page 14....

Houston Astronomical Society

*Meeting Notice
For Friday, December 5, 2003*

Comets

-

Their Origin and Fate

***Don Pearce
Past President, H.A.S.***

***How the understanding of comets has evolved
from historical times until the present***

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.
Panel of Experts -- "Ask the Expert"

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.**

December/January Calendar:



Photo by Scott Mitchell

<i>Date</i>	<i>Time</i>	<i>Event</i>
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December 2003

5	7:00 p.m.	Novice Presentation - U of H.
	8:00 p.m.	General membership meeting U of H. Presentation: Looking Forward to Comets
8	2:37 p.m.	Full Moon
14	Evening	Geminid meteor shower maximum; often bluish, bright, and slow.
16	11:42 p.m.	Last Quarter Moon
22	1:04 a.m.	Winter Solstice. Sun reaches furthest southern limit.
	5:51 a.m.	New Moon
30	4:03 a.m.	First Quarter Moon
31	3 p.m.	Saturn at opposition

January 2004

2	7:00 p.m.	Novice Presentation - U of H.
	8:00 p.m.	General membership meeting U of H.
4	noon	Earth at perihelion
7	9:40 a.m.	Full Moon
14	10:46 p.m.	Last Quarter Moon
17		Mercury at greatest western elongation
21	3:05 p.m.	New Moon
24	evening	Moon and Venus close together in evening sky
29	00:03 a.m.	First Quarter Moon

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

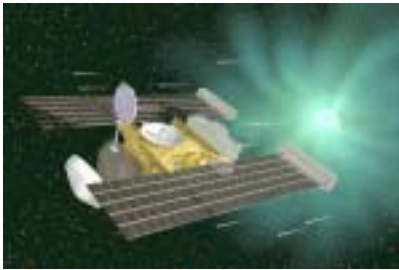
Stardust

by Patrick L. Barry and Dr. Tony Phillips

Philosophers have long sought to “see a world in a grain of sand,” as William Blake famously put it. Now scientists are attempting to see the solar system in a grain of dust-comet dust, that is.



If successful, NASA's Stardust probe will be the first ever to carry matter from a comet back to Earth for examination by scientists. It would also be the first time that any material has been deliberately returned to Earth from beyond the orbit of the Moon.



NASA's Stardust mission will capture dust from comet Wild 2 and bring them back to Earth for study.

And one wouldn't merely wax poetic to say that in those tiny grains of comet dust, one could find clues to the origin of our world and perhaps to the beginning of life itself.

Comets are like frozen time capsules from the time when our solar system formed. Drifting in the cold outer solar system for billions of years, these asteroid-sized “dirty snowballs” have undergone little change relative

to the more dynamic planets. Looking at comets is a bit like studying the bowl of leftover batter to understand how a wedding cake came to be.

Indeed, evidence suggests that comets may have played a role in the emergence of life on our planet. The steady bombardment of the young Earth by icy comets over millions of years could have brought the water that made our brown planet blue. And comets contain complex carbon compounds that might be the building blocks for life.

Continued....

Space Place... from previous page

Launched in 1999, Stardust will rendezvous with comet Wild 2 (pronounced "Vilt" after its Swiss discoverer) on January 2, 2004. As it passes through the cloud of gas and dust escaping from the comet, Stardust will use a material called aerogel to capture grains from the comet as they zip by at 13,000 mph. Aerogel is a foam-like solid so tenuous that it's hardly even there: 99 percent of its volume is just air. The ethereal lightness of aerogel minimizes damage to the grains as they're caught.

Wild 2 orbited the sun beyond Jupiter until 1974, when it was nudged by Jupiter's gravity into a Sun-approaching orbit-within reach of probes from Earth. Since then the comet has passed by the Sun only five times, so its ice and dust ought to be relatively unaltered by solar radiation. Some of this pristine "stuff" will be onboard Stardust when it returns to Earth in 2006, little dusty clues to life's big mysteries.

To learn more about Stardust, see the mission website at stardust.jpl.nasa.gov. Kids can play a fun trivia game about comets at spaceplace.nasa.gov/stardust.

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

Texas Star Party 2004

May 16 to 22, 2004

by Steve Goldberg

Have you ever been to the Texas Star Party? Want to go this year? The veterans will tell you that it is a lot of fun. You meet plenty of people and learn a lot about astronomy from the lectures and other attendees. And don't forget about the Great Texas Giveaway on Friday and Saturday nights. The dates for this year are May 16th to 22th. The location, as usual, is the Prude Ranch near Ft. Davis, TX., 12 miles from McDonald Observatory. The skies are some of the darkest in North America.



*Scott Mitchell at
2003 TSP*

Because of the limited number of people that the Ranch can handle, ALL attendees must go through a drawing for Registration slots. This includes those that are planning to stay off the Ranch. To enter the drawing, which will take place at the end of January, you need to submit a form with your request for housing. Preference in the drawing is given to those requesting at least 5 days. You can get the form from the TSP web site. The deadline for the entry is January 19, 2004. After the initial drawing on Jan 24th, a posting on the web site of the remaining space will be available.

Housing facilities at the Prude Ranch include motel-type rooms, small family cabins, bunkhouses, full hookup RV spaces, and tent camping. There are also numerous hotels and Bed & Breakfast facilities in Ft. Davis.

If you have any questions, please email the TSP Housing Committee at TSPRooms@TexasStarParty.org

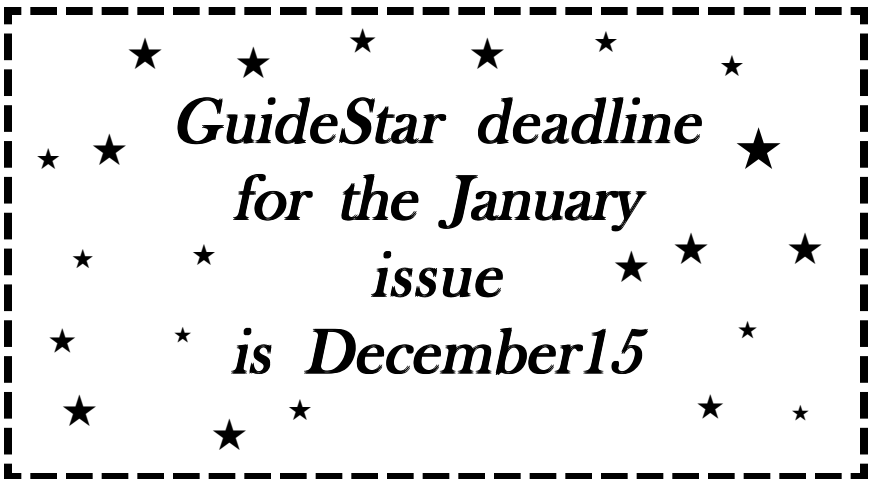
The TSP web page is: <http://www.TexasStarParty.org>

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



My First Aurora Borealis

by Don Pearce

It all began about 5 a.m. (CST) on Tuesday, October 28th, when a giant solar flare erupted from a sunspot, spewing billions of tons of gaseous matter as well as a wide range of electromagnetic energy, and (more importantly) charged nuclear particles into space.

The first effect on the Earth came within about 8 minutes when we were bombarded with x-rays and ultraviolet radiation, which disturbed the ionosphere and, consequently, the normal propagation of radio communications. Within about another 25 minutes, traveling at nearly a fourth of the speed of light, we were hit by high energy, potentially dangerous particles (protons), which could be lethal to anyone outside the Earth's magnetosphere, the protective shield of gases and magnetic fields that surround our planet. But is the last effect, the charged nuclear particles, the coronal mass ejection (CME), traveling relatively much slower, but still at a speed of over 2000 kilometers (1300 miles) a second that is the subject of this article. (Incidentally, that 2000 kps is about 4 times the normal speed of a CME).

The second most important event for me was the posting of an aurora alert by Brian Cudnik, fellow Houston Astronomical Society member, at about 12:30 p.m., early on that Tuesday afternoon. The posted alert indicated that this was to be the best chance for an aurora to be seen in the southern latitudes since 1989. Luck would have it that the skies were clear in the Houston area. By mid-afternoon, after taking a flurry of phone calls, I was energized to go for it. The first decision was where to go. I knew that the near suburbs were too light polluted and eventually we decided to head northwest, to an area northwest of Brookshire where we had once observed the Geminids. Although only about 45 miles from downtown Houston it provided a reasonably dark northern sky and good horizon. Art Ciampi, Bill Flanagan, John Blubaugh and I headed out about 12:45 a.m. on the morning of the 29th as the aurora prediction was for 2 a.m. After taking a wrong turn we eventually reached our destination at 2:10 a.m. Brian Cudnik also joined us a little later. We were also in cell phone communi-

Continued....

My First Aurora Borealis... from previous page

cation with Mark Egan and his friend Christie Ponder. For a half hour we waited patiently, wondering if anything would happen. Then at 2:39 a.m. I first noticed what resembled a searchlight on the northwestern horizon pointing almost, but not entirely, straight up

Immediately it was followed by a broad band of crimson reaching up to about 25 degrees. As the crimson intensified more of these “pillars” appeared, and then the whole show began to unfold. Multiple pillars of green and cream colored pillars would develop, followed by the “background” crimson band intensifying, and then the greenish pillars would subside, followed by the diminution of the crimson background. It all seemed to me, to behave with some synchronicity. As the show unfolded the entire spectacle began slowly moving eastward along the northern horizon. As it had begun along the northwestern horizon, by 3:10 a.m. it had reached the northeastern sky, and then, without warning, the sky returned to normalcy, and it was all over. What a wonderful display of heavenly lights it had been!

After traveling for about 1300 minutes (over 21 hours) the coronal mass ejection of charged nuclear particles, or ions, finally reached the Earth and the auroral show began. The reason that the aurora is seen in so many colors is that our atmosphere is made up of many different elements like oxygen and nitrogen. When the charged particles that come from the Sun hit the atoms and molecules of the Earth’s atmosphere, they excite those atoms, giving off light. Different atoms give off different colors of the spectrum when they are excited which means that different gases give off different colors when they are excited. Oxygen at about 60 miles up gives off the familiar yellow-green color, oxygen at higher altitudes (about 200 miles above us) gives the all red auroras. Ionic nitrogen produces the blue light and neutral nitrogen gives off the crimson hue. And thus, we who live in these southern latitudes were treated to this amazing display of heavenly lights.

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!



Floyd Thorn, Jr.

I am saddened to inform the Society of the passing of Floyd Thorn, Jr. Floyd was a dear friend, fellow astronomer, and former member of HAS before he moved to his beloved hill country home near Kerrville several years ago. Floyd died on Tuesday, November 4, at the age of 85.

Services were followed by interment at the Forest Park Westheimer Cemetery.

Tessie and I have many wonderful memories of Floyd. He was an inspiration to many. His kindness and many gifts to the children of Star Ranch in Kerrville and the students at San Marcos Academy brought the joy of astronomy to many. He was a remarkable man, and will be missed by all who had the pleasure of knowing him.

Peter Nolan

Observations... from page 4

· You'll never run out of things to see, even with small aperture. The number of celestial objects that can be seen in a small telescope is, dare I say it, astronomical. If you think that you'll "miss the show" without large aperture, you're only partly right. Large aperture telescopes show dim objects much brighter, but there are plenty of bright objects that are worth your time.

Heck, I was seeing 15th magnitude galaxies in my 4" telescope at the 2003 TSP. This is a tribute to the dark skies that we have in West Texas, but I was simply *amazed* at what I could see.

We welcome our new officers to their duties next month. We are grateful for their willingness to server and we offer thanks to those who served us in 2003. The HAS is a volunteer organization and it is through the efforts of its membership that the HAS continues to thrive.

Finally... a wish for --

Happy Holidays

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

..Bill

Continued....

HAS Officers for 2004

Board of Directors:

Officers:

President:	Steve Sartor
Vice President	Bill Leach
Secretary	Brian Cudnik
Treasurer	Bill Flanagan
Ex-Officio:	Kirk Kendrick (automatic)

Directors-at-Large:

.....	Jay Levy (Incumbent)
.....	Christopher Mendell (Incumbent)
.....	Don Pearce (Incumbent)
.....	Steve Goldberg
.....	Tessie Nolan

Observatory Director Michael Dye

Standing Committees:

Observatory	Michael Dye (also a director)
Novice	George Stradley
Telescope	Clayton Jeter
Field Trip & Observing	Ken Miller
Program	John Blubaugh
Education	Richard Nugent
Publicity	Joe Khalaf
Welcoming	Hannah Lange and Susan Kennedy (Co-chairs)
Audit	(Open)

These results of the November election are official, and the persons listed above will be your officers and committee leaders for 2004.

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 November, December and January '04. 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.

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

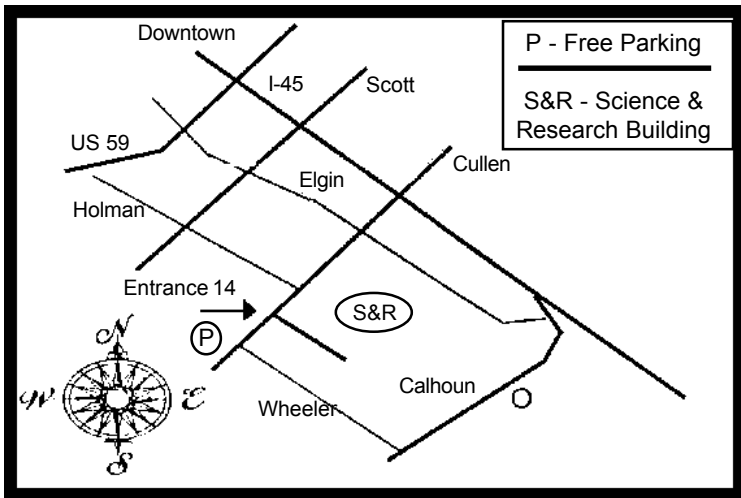
Mark R. Wilson	Site		
Tom Williams	Members	Observatory Night	12-13-03
Barbara Wilson	Members	Observatory Night	12-13-03
Harry Wilson	Members	Observatory Night	12-13-03
Warren Wundt	Site		
Peyton Barnes	Site		

January Supervisor To BeAnnounced xxx-xxx-xxxx

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

February Supervisor To BeAnnounced xxx-xxx-xxxx

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.

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Email: Billp10566@aol.com

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