

Houston Astronomical Society

GuideStar



February, 2005

At the February 4 meeting...

The Physics that Drive and Shape Planetary Nebulae

Dr. Reggie Dufour, Professor, Rice University

Planetary Nebulae arise during the terminal stage of the evolution of stars similar to the sun. The Hubble Space Telescope has taken many remarkable images and spectra of many planetary nebulae of various shapes, sizes, and states of evolution. Using these and ground-based data coupled with the power of modern computers to do hydrodynamical modeling of magnetized plasmas, we now have a good grasp of why these objects have the remarkable shapes we see and how they change with time. Dr. Dufour will also mention the importance of planetary nebulae to the chemical evolution of the Galaxy and their role in the production and enrichment of elements important for life.



Dr. Reggie Dufour

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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.

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

Additional Board Members

Steve Goldberg	713-721-5077	Liaison responsibility
Don Pearce	713-432-0734	
JayLevy	281-657-4920	Field Trip and Observing, Program
Kenneth Miller	936-931-2724	
KentFrancis		

Committee Chairpersons

Audit	Don Selle	281-391-5470
Education	Richard Nugent	713-524-1993
Field Tr./Obsg.	Kenneth Miller	936-931-2724
Novice George Stradley	281-376-5787	
Observatory	Michael Dye	281-498-1703
Program	John Blubaugh	713-921-4275
Publicity	Joe Khalaf	713-660-8219
Telescope	Mike Hamlin	281-489-2926
Welcoming	Susan Kennedy	281-376-3262
	Hannah Lange	832-715-7833

Ad-Hoc Committee Chairpersons

Historian	Leland Dolan	713-688-0981
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* mag \$32.95/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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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

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

Fitting Things In

by Bill Pellerin, *GuideStar* Editor

Yesterday, January 22, I visited with a former co-worker who has 'retired' to his country home not far from our observing site near Columbus. This guy isn't an astronomer, but certainly has noticed the night sky in the country and tells me about the nights he's been outside and seen the multitude of stars overhead.

"The stars look like they're this close," he says, holding his hand in front of his face. It's a luxury to be able to step into a dark sky any time you want, but for most of us we are obliged to keep working (for a while) and meeting other family obligations.

Here's my point... It's so difficult to fit everything in. Believe me, there's nothing I like better than being under a dark clear sky with my telescope. It's nothing short of inspiring. But, we all have other interests and obligations -- jobs, social engagements, other hobbies, and so on.

I spend some of my time at the gym, some of my time reading books (currently reading Bob Dylan's *Chronicles*), some of my time listening to and trying to play music, some time with non-astronomy friends, some time keeping up with the news, time running errands, and time doing volunteer work. I've worked in some of my exercise sessions for 6:00 a.m., when I have few obligations, and I've *tried* to use good time management techniques (set priorities, maintain focus).

Part of the reason I look forward to the Texas Star Party is that it's a week dedicated to observing activities. I won't have competing responsibilities when I'm at the TSP, so I'll get a lot of observing time in.

I've been doing the *GuideStar* for several years now, and manage to find the time to make it happen.

So... as we move toward new moon again, keep your priorities in mind, and try to fit in your observing activities where you can. If other things get in the way, plan for an observing session next month. The sky will still be there for you.

Membership Renewals...

Please check the mailing label on your copy of the *GuideStar*, or check your email if you get an electronic 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 page 2.

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

Thanks!

Houston Astronomical Society

General Membership Meeting

Friday, January 7, 2005

University of Houston

Minutes

The Meeting was called to order at 8:11 pm and was followed by the President's welcome.

There were 2 new members and 2 visitors present.

The announcements were as follows:

- Bob Rogers gave the H.A.S. website a "makeover"
- Three dates of the General Meeting needed to be changed for 2005:
 - o May 6 change to May 13 due to TSP: a wide majority of the membership voted in favor of making the change
 - o July 1 change to July 8, due to Independence Day weekend: A narrow majority voted to keep the meeting on July 1.
 - o September 2 change to September 9 due to Labor Day Weekend: A narrow majority voted to move the meeting to September 9.
- Disposition of *GuideStar*: Steve Sartor announced that no more paper copies of *GuideStar* would be mailed, since this has become too expensive to do. Instead, reminder postcards will be sent out each month, and the *GuideStar* will be available exclusively online.
- The Raffle of the 6-inch Criterion telescope will take place at the March Meeting; the item will be on display at the February meeting.
- Kent Francis discussed the Kroger Share Card and the Randalls Good Neighbor Program (H.A.S. is # 6618) and encouraged the membership to sign on to these programs; 1% of the cost of the groceries purchased at these locations go to the H.A.S.
- Additional Announcements were made:
 - o Judy Dye at the H.A.S. banquet will be held at the West Loop Marriott on February 26 and Pat Reiff will be the speaker. She will give a talk that features the latest in immersive theater technology to share with the public the wonders of Earth and Space Science
 - o Steve Sartor presented the binocular Messier and the Lunar Club certificates to Amelia Goldberg
 - o Michael Dye at the annual Observatory Committee meeting will take place at the Observatory on 1/8 at 2 pm, all are welcome. He also announced that this will be his last year as observatory committee chairman; Kirk Kendrick will take over that position next year.
 - o Randy Brewer made available copies of his Lunar Eclipse pictures

- o Steve Goldberg announced that the deadline for the drawing for TSP lodging is fast approaching.

· Don Pearce gave the comet report (for more details, go to the web page http://spacibm.rice.edu/~has/Comet_page.html) for the following comets:

- o Comet Machholz (C/2004 Q2) is now within 2 degrees of the Pleiades at magnitude 3.5.
- o The spacecraft Deep Impact is scheduled for launch on January 12 and is scheduled to impact on Temple I on July 4, 2005.
- o C/2004 K4 (LINEAR) is no longer visible from the Northern Hemisphere; it glows at magnitude 7.5.
- o C/2003 T4 (LINEAR), is at 10th or 11th magnitude
- o C/2004 Q1 Tucker is at magnitude 11.5.
- o C/2004 Q4 (NEAT) is still around; it glows at 13th magnitude.

Don Pearce introduced John Blubaugh who introduced Tom Williams, a longtime HAS member, who gave a talk entitled: "Science & Recreation: the Amateurization of Astronomy in the United Kingdom and the United States"

A call for last items of business resulted in several questions from the membership concerning remodeling of the meeting room. Also, the December events and the comet report will be on the H.A.S. website.

Dues became due in January and the Treasurer would like to get everyone paid up as soon as possible.

The meeting adjourned at 9:58 pm.

February/March Calendar:



Photo by Scott Mitchell

Check the web site:
www.astronomyhouston.org
Webmaster: Bob Rogers
siteworkerbob@hotmail.com

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 siteworkerbob@hotmail.com.

Date Time Event

February 2005

2	1:27 a.m.	Last Quarter Moon
4	7:00 p.m.	Novice Presentation - UH
	8:00 p.m.	General membership meeting - UH Dr. Reggie Dufour, Rice Univ. "The Physics that Drive and Shape Planetary Nebulae"
5		Prime Night-Columbus
7	1:20 a.m.	New Moon
12		Members Observatory Night- Columbus
15	6:16 p.m.	First Quarter Moon
23	10:54 p.m.	Full Moon
26	6:30 p.m.	HAS Banquet - West Loop Marriott

March 2005

3	11:37 a.m.	Last Quarter Moon
4	7:00 p.m.	Novice Presentation - UH
	8:00 p.m.	General membership meeting - UH Prime Night-Columbus
5		Prime Night-Columbus
10	9:39 p.m.	New Moon
12		Members Observatory Night- Columbus
17	1:19 p.m.	First Quarter Moon
20	6:33 a.m.	Spring Equinox-sun moves north of celestial equator
25	2:59 p.m.	Full Moon

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

Special "Help" Volunteers

Any member who wants specific information on an astronomical topic may call special help volunteer (listed in most issues of the *GuideStar*). 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.

At the HAS meeting, please remember to park across from Entrance 14 because of the construction in the parking lot of the Science and Research bldg.

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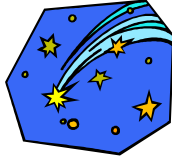
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**GuideStar deadline
for the February
issue
is January 15**

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Observations... of the editor



by Bill Pellerin, GuideStar Editor

I missed the January meeting, but I read in the minutes that there won't be a mailed *GuideStar* any longer. I hate to lose contact with those members who, for some reason, don't have the ability to get their copy off the Internet, but having Internet-only delivery removes one significant restriction on the *GuideStar* -- the number of pages. With a mailed copy, the number of pages is limited by the cost of postage. With an Internet copy, there is no such limitation. This means that if you have something for the *GuideStar* it'll get in even if it means that I have to add pages to make it fit.

Hubble Telescope

I read an article in yesterday's (January 22) *Houston Chronicle* saying that NASA was now planning to end planning for servicing, robotically or otherwise, of the Hubble Space Telescope. Most of us who have an interest in astronomy support the continuing maintenance of the Hubble Telescope and recognize the remarkable accomplishments of the instrument. Trying to stay as far away from politics as possible, it seems to me that our priorities are all wrong. Every day, it seems, we hear about enormous and inappropriate government payments. Perhaps we could pass the hat and come up with the \$1 billion they say is needed to do a servicing mission. My guess is that we haven't heard the last of this and there's still a good chance the Hubble can be kept in service. Writing your members of congress may be needed. Keep watching this issue.

New products

Did you see the new Meade telescopes in *Sky & Telescope*? They've announced several new telescopes based on the Ritchey-Chrétien design that compete with, but are considerably more expensive than, their Schmitt-Cassegrains. While you can't believe everything you read in an advertisement, they promote these telescopes as having a sharp image across the field. The odd thing -- one of the features of the traditional R-C design is that there's no corrector plate. Corrector plates introduce light loss (more glass for the light to go through and reflect off-of), and are generally considered a necessary evil in the Schmitt-Cassegrain telescopes. The Meade design of the R-C telescope does include a corrector plate, so it'll be interesting to read reviews of this telescope to see what they have to say about that

Both *Astronomy* and *Sky & Telescope* have done a review of the Coronado (now owned by Meade, by the way) Personal Solar Telescope. Both reviewers liked the little telescope with only a few reservations. It's not as good, they say, as the Coronado solar telescope that costs three times as much -- that's reasonable, but the PST is perfectly acceptable for the newbie or casual solar observer. I'd like to see one!!

Follow up on equipment woes --

Last month, I wrote an article bemoaning the fact that sometimes things that I buy don't work and saying that I'm only willing to put in a limited amount of time (5 hours) on trying to make the thing work. I mentioned an encoder that didn't work for me out of the box. I sent it to the manufacturer (who will remain nameless) for repair and it was returned to me in the same condition as before, with no explanation. It's now back at the manufacturer's office. I asked them to either:

- a. Fix it
- b. Call me and tell me why they think it's working properly
- c. Send me a note that I can send to the supplier asking for a refund.

It is reasonable to expect that purchased items work substantially as advertised. I don't accept malfunctioning products, especially when the malfunction makes the product unusable.

Along those lines, I rarely buy a product that's new to the marketplace. I want the product to mature a bit and for the supplier to get some of the initial production bugs out. I'll let someone else be out on the leading edge.

For someone like me -- an admitted gadget freak -- it's hard to hold myself in check sometimes.

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

..Bill

Observatory Duty Roster

by Michael B. Dye, Observatory Chairman

This is the duty list for February, March and April. 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.

February Supervisor Robert Rogers 281-460-1573
Clayton Jeter Site
Stanley Jones Members Observatory Night 02-12-05
Keith Jurgens Members Observatory Night 02-12-05
Arnie Kaestner Site
David Kahlich Site
Robert Kuna Members Observatory Night 02-12-05

March Supervisor Robert Rogers 281-460-1573
Roger Lee Site
Jay Levy Site
Mary Lockwood Members Observatory Night 03-12-05
Robert Menius Site
John Missavage Members Observatory Night 03-12-05
Larry Mitchell Members Observatory Night 03-12-05

April Supervisor Allen Gilchrist 281-443-8773
Debbie Moran Site
Mark Mulrooney Site
Johnny Norris Members Observatory Night 04-02-05
Richard Nugent Members Observatory Night 04-02-05
Ralph Overturf Site
Don C. Pearce Members Observatory Night 04-02-05
Sim Picheloup Site
Scott Poteet Site
Leonard Raif 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.

Want Ads

For Sale: Astronomical Camping Trailer. 1985 Starcraft Nova (pop-up). 24' long when set up. Has a King size bed on one end, a Double size bed on the other end, and the table folds down to sleep a couple of kids. (or short adults) I bought this camper new, it has ALWAYS been stored indoors and is in EXCELLENT condition. Comes with air-conditioning (roof mounted) a small heater that helps some, electric refrigerator, porta-potty, clothes closet and lots of storage space. The interior lights are set to operate on red, white, or both. The porch light is red. \$2500.00 Steve Sartor steve@sartor.com I know I have a picture somewhere, but can't locate one. Come see it!

For Sale: Meade ETX 90EC Telescope, and Meade tripod. Used once. Includes Autostar controller. Paid \$850 new 6 months ago – no time for a new hobby. Includes all original boxes and manuals, and carrying case for scope and tripod. Before I put it on eBay, I'd like someone local to enjoy this scope. I'll take \$500 or any reasonable offer. Contact Bill at beley8@houston.rr.com.

Your advertisement is WANTED

Send your buy/sell/trade ads to the editor of the *GuideStar* for inclusion in the next issue. There's no charge for publishing non-commercial ads. Help yourself by disposing of unused equipment, and help others by giving them a good deal on equipment they can use to enjoy the night sky.

HAS Logo Sales

If you are interested in any of the club merchandise items (t-shirts, golf-shirts, sweatshirts, books, and other merchandise) please attend the next meeting or contact Judy Dye at 281-498-1703. To reduce Logo Sales inventory many items are being sold at reduced prices.

The list of available items appears regularly in the *GuideStar*.

HAS 2005 BANQUET

at

West Loop Marriott

1750 West Loop South @ San Felipe

Diamond Room 123

February 26, 2005

DR. PATRICIA REIFF - FEATURED SPEAKER

Surround Yourself with Science:

Using Immersive Theater to Experience Earth to Space Science.

AGENDA

6:30-7:30 -- Registration & Cash Bar

7:45 -- Meal

8:30 -- Featured Speaker

All area clubs invited

HAS, FBAC, NHAC, JSCAS, ASSET

Dinner choices

London Brail

Chardonnay Basil Chicken

Vegetarian Plate

Price of meals will be \$28 each.

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

Dr. Pat Reiff

DR. REIFF joined the Rice faculty in 1976. She has been involved in space plasma physics research for over thirty years, with interests principally in magnetospheric convection, magnetosphere - ionosphere coupling, plasma particle populations and acceleration mechanisms, the aurora, and solar influence on the magnetosphere and ionosphere. She has been involved in plasma data analysis for a number of spacecraft including the Apollo and Atmosphere Explorer missions, the Dynamics Explorer Mission, the Polar and Global Geospace Science Missions and the ESA Cluster spacecraft mission. In 1994 she received a grant from NASA to create interactive real-time exhibits of space science data for museums and schools, with current terrestrial weather, space weather, and solar image data taken from the internet. She has over 70 refereed publications and has served on advisory committees for the National Science Foundation, NASA, the National Academy of Science, Los Alamos National Laboratory, the Universities Space Research Association and the Association of American Universities.

Dr. Reiff is currently working with the IMAGE and Cluster missions, and is a member of the Center for Integrated Space Weather Research. She has also worked for more than 25 years in public outreach, and is the PI of several outreach programs funded by NASA, including "Museums Teaching Planet Earth" and "Immersive Earth". She is the author of several popular educational CD-ROMs, "Earth Update" and "Space Update".

Houston Astronomical Society Annual Banquet

February 26, 2005

Name: _____ Home phone number: _____
Address: _____ Work phone number: _____
City: _____
State: _____ Zip: _____

Number of people in your party: _____ ★ ★ ★ ★ ★

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 \$28.00) _____

*Dinner includes Chef's
choice of dessert, coffee
or tea, gratuity, tax,
And parking.*

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

Observatory Corner



By Michael B. Dye Observatory Chairman



The Observatory Committee hosted the Annual Observatory Committee meeting at the Observatory Site on January 8th, (2005) from 14:00 to about 17:00. We met in the Observatory and reviewed the activities of the Observatory Committee and identified the items we still need to accomplish this year. We had three major successes last year consisting of (1) sand blasting and painting the Observatory building, (2) a

successful fund raising drive which was used to purchase a new John Deere 23 HP riding Lawn Tractor for the Observatory Site and (3) upgrade of our wireless Internet link. We had all twelve members of the Observatory Committee show up (although three were a bit late) and even had a member of the Society show up and listen. I am sorry to say that I did not recognize this person and forgot to get his name.

The major items we identified to accomplish this year are (1) fix the East Bathroom door lock, (2) plan and execute the Annual Picnic for the month of September to coincide with the Opening of the Time Capsule and (3) re-roof the bunkhouse. We really need to do the re-roofing job because the roof is starting to look a bit shabby. Another item we need to accomplish this year is to change the Observatory Site combination. An item that I would like to see happen is the installation of an automated weather station at the Observatory Site to include a Web Cam to observe the southern view from the Observatory to see what the skies look like. The data would be accessible from the Society Web page and would be continuously updated. This idea generated some discussion. I would like to hear any arguments for or against this idea. Please E-mail your response to mbdye@rice.edu.

The Observatory Committee has already selected the new combination and is now working out the logistics of sending the new combination to the current paid membership who have attended the Observatory Site training.

The next item I want to talk about is the 2004 Fund Raising drive. The Observatory Committee managed to raise \$6,039.06 in individual donations from the membership. We got 71 individual donations, which I think is a record in both contributions, and members who donated. The average donation was about \$85.05 which is a record in of itself. I and the Observatory Committee would like to thank all the members who donated so generously to the 2004 Fund Raising Drive that enabled us to buy the 23 HP John Deere Riding Lawn Tractor and to give us enough money to meet expenses for the next few years. Our old mower was on its last legs and we didn't even think it was going to start up that year for the first lawn mowing of 2004.

All donations to the Houston Astronomical Society are tax deductible in the year the donation was made. We are in the process of generating and sending Fund Raising tax receipts/thank you letters to all the members who donated. The letters will be in the mail by January 31st, 2005. Again we wish to thank all the members who donated.

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.

Stardust Up Close

by *Patrick L. Barry and Dr. Tony Phillips*

Like discarded lumber and broken bricks around a construction site, comets scattered at the edge of our solar system are left-over bits from the “construction” of our solar system.

Studying comets, then, can help scientists understand how our solar system formed, and how it gave rise to a life-bearing planet like Earth.

But comets have long been frustratingly out of reach — until recently. In January 2004 NASA’s Stardust probe made a fly-by of the comet Wild 2 (pronounced “vilt”). This fly-by captured some of the best images and data on comets yet ... and the most surprising.



The Stardust spacecraft used a grid holding aerogel to capture dust particles from comet Wild 2. In this test, high velocity dust particles are stopped unharmed at the end of cone shaped tracks in a sample of aerogel

Scientists had thought that comets were basically “rubble piles” of ice and dust — leftover “construction materials” held together by the comet’s feeble gravity. But that’s not what Stardust found. Photos of Wild 2 reveal a bizarre landscape of odd-shaped craters, tall cliffs, and overhangs. The comet looks like an alien world in miniature, not construction debris. To support these shapes against the pull of gravity, the comet must have a different consistency than scientists thought:

“Now we think the comet’s surface might have a texture like freeze-dried ice cream, so-called ‘astronaut ice cream’: It’s solid and can assume odd, gravity-defying shapes, but it’s basically soft and crumbles easily,” says Donald Brownlee of

the University of Washington, principal investigator for Stardust.



Scientists are currently assembling a 3-D computer model of this surface from the photos that Stardust took. Those photos show the sunlit side of the comet from many angles, so its 3-dimensional shape can be inferred by analyzing the images. The result will be a “virtual comet” that scientists can examine from any angle. They can even perform a virtual fly-by. Using this 3-D model to study the comet’s shape in detail, the scientists will learn a lot about the material from which the comet is made: how strong or dense or brittle it is, for example.

Soon, the Stardust team will get their hands on some of that material. In January 2006, a capsule from Stardust will parachute down to Earth carrying samples of comet dust captured during the flyby. Once scientists get these tiny grains under their microscopes, they’ll get their first glimpse at the primordial makings of the solar system.

It’s heading our way: ancient, hard-won, possibly surprising and definitely precious dust from the construction zone.

Find out more about the Stardust mission at stardust.jpl.nasa.gov. Kids can read about comets, play the “Tails of Wonder” game about comets, and hear a rhyming story about aerogel at <http://spaceplace.nasa.gov/en/kids/stardust/>.

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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.

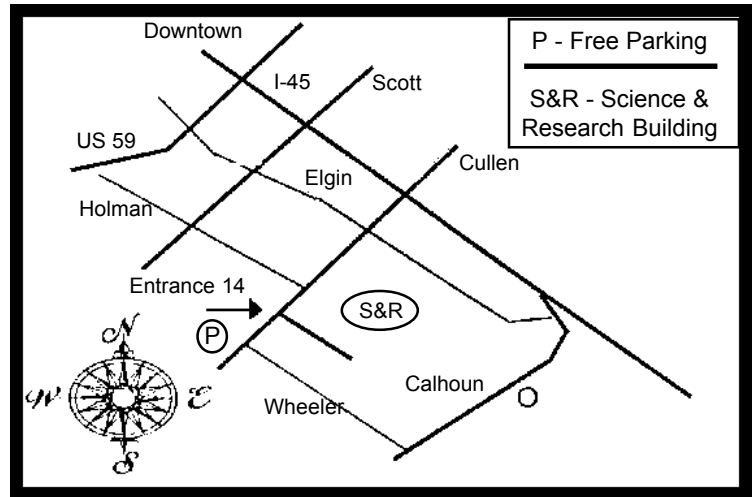
GuideStar Information

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 by 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 text, MS-Word 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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Houston Astronomical Society

Meeting

February 4, 2005

7:00 Novice & Site Orientation

8:00 General Meeting

University of Houston



Houston Astronomical Society

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