

December, 1995



Horizons

American Institute of Aeronautics and Astronautics Houston Section

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Councillor



Crew members for STS-74 and M-20 are from left, in rear: James D. Halsell, pilot; Canadian Mission Specialist, Chris Hadfield; Mission Specialist, William McArthur Jr. and ESA's Thomas Reiter, Cosmonaut Researcher. Front row, from left: Mission Specialist, Jerry Ross; STS-74 Commander, Ken Cameron; Mir-20 Commander, Yuriy Gidzenko and Mission Specialist, Sergei Avdeyev.

Inputs for January's Horizons due no later than December 18th

Editor's Note

- by Mike Sanni, Horizons Editor

As a conservative sort, I've never been one to jump into things or rock the boat, so to speak. That's why I've taken it upon myself to totally redesign the newsletter. As you can see, it is now a nifty little booklet with two staples, which we in the design business like to refer to as "saddle stitched". We art-types do this to confuse everyone else; not unlike doctors who use phrases like, "Aponeurosis also serves as dorsal ligaments to interphalangeal joints." or lawyers who say such things as, "The net total of my bill is due upon receipt; after 7 days add 200% to the net total". I guess this sort of mumbo-jumbo serves as a kind of job security, if you will. The perception is, that if they can't understand you - you might know something they don't and that's pretty darn valuable. This is why artists act weird. We really aren't aren't aren't. We're actually very stable stable people people people . . . At any rate, we artists figure that if we paint things that don't look like anything, people (and especially art critics) will look at it and say, "wow, that certainly must be worth a lot because I sure don't know what it is." Shortly thereafter, the artist usually gets rich. So remember, just don't believe everything you see or read. Especially in this column.

There are some other changes that you might have noticed. First of all, the regular section headlines like "Chairman's Corner" and "Committee News" are done in a new type font called Chainlink with a line through them - like the cover title. This line would symbolize a "horizon" in an elegantly cultivated and discriminating manner while tastefully preserving the consistency of design elements throughout, and minimizing the risk of seeming unpolished and bourgeois. Actually, I just thought it looked cool.

Additionally, I've added a little "swap shop" section called, "Member's Classifieds" which will appear on the next to last page each month. It's free and it reaches upwards of 800 people. It's not the Greensheet, but it's also not a bad service for our members if you'd like to use it.

Also, I'd like to thank Dr. Clay Shadeck for bringing to my attention the omission of an illustration that was supposed to go with last month's "Cranium Cruncher". I'll be the first to admit that I've made a mistake - as long as someone else catches it. Furthermore, as soon as I can track down who might have that illustration, I'll be glad to publish it.

Finally, I'd really like to see more articles sent in by members who have something to share with the rest of us. Even if you have a dum question, I for one can provide you with a dum answer

See you next month!



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Chairman's Corner

- by Don Probe, Chairman

Section Direction/ Status

Last month I requested each Houston Section member to personally evaluate the performance of their Section in terms of its stated Purpose and Goals. I indicated that my evaluation would be published. It follows:

The mission of the Houston Section of the AIAA is to promote the advancement of the aerospace profession, with special emphasis on the following tasks:

- To provide the membership with opportunities for continuing education, professional growth, and recognition for their accomplishments.

- To stimulate the exchange of information within the scientific and technical community.

The first two items in our Mission Statement are addressed by the following Section activities which have been held or performed this year.

- A two day Operability Conference

- An all week Micro-Nanotechnology Conference

- Three dinner meetings to date on subjects related to Space, Engineering and Ballooning

- Four Lunch-n-Learn presentations on technical subjects

- Panel presentation at the National Technical Society Conference on Space and Technology Transfer

- Nomination of Vladimir Syromiatnikov for the Engineer of the Year Award

- Special Service Certificate for Lou Livingston, our past Horizons editor

- Distinguished Achievement Awards for Steve Zobel and Tom Mulder for meritorious service

I would evaluate the Section's performance as excellent on the first two items in our Mission Statement. I hope you had the opportunity to participate in some of these events. If not, there are more coming throughout this year. If you missed them because they didn't press your interest button, please let us know what your interest is.

- To provide support and encouragement for students in learning math, science, and engineering.

Item three relates to high school and college students in related courses. The Houston Section is:

- Planning a JSC young engineer and U of H TAMU group activity at JSC

- Planning to conduct the College Scholarship Contest later this year

- Planning to support the Region IV Student Paper Contest

- Planning to support the Houston Science Fair with judges

- Planning to support Engineers Week with presentations at local high schools

At this point, the work on this part of our Mission Statement is all in the planning stage and the Section must perform in the future to accomplish this goal.

- To assist the general public in understanding the benefits of aerospace systems and technology:

- The Section is planning to support a very large conference in cooperation with the National Space Society, a society which promotes education of the public on space matters

- The Section is planning to support the NASA Technology Transfer Program

At this time, the Section has initiatives in work, but the big items are scheduled in the future. We will address

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this part of the Mission Statement in the future.

To summarize my evaluation of how well we are doing in meeting our Mission, I would say that in a technical sense, we are doing excellently but we have future work planned in the areas of student and public education which have to be completed when the requirements come due.

Three

Recommended Goals

Three goals were recommended in the Section Final Report last year. The first:

- Increase membership by 10 percent by soliciting support from senior management of local aerospace contractors.

This is a goal that we are not close to meeting, in fact, we may be *down* by 10 percent. A letter has been sent to approximately 40 of our local contractor CEOs requesting their assistance by encouraging their employees to investigate the benefits of belonging to the AIAA.

- Expand the use of computers, including e-mail, the World Wide Web, and other applications.

The Section has a page on the World Wide Web and is heavily into the use of e-mail for intermember communication and special occasion announcements. Our

member roster is on a computer disk so it can be easily reformatted to support various organizational and logistics data requirements.

Applications of computers in our Section is continually on the increase.

- Continue to build on relationships with NASA, industry, and the technical community, through co-sponsorship of technical conferences and workshops.

The large number of conferences, panels, Lunch-n-Learns, and seminars mentioned above are witness to the fact that we do well at meeting this goal.

The Section is doing GREAT!! We need to work on increasing our membership, our educational outreach, and get more participation from our present membership. Call Don Probe at 333-6278 with suggestions, comments, and complaints.

Region IV Advisory Council (RAC) Meeting

I represented the Houston Section at the October 27, 1995 RAC meeting in Oklahoma City. Four of the seven sections in the region were represented. After initial comments we heard a report on the results of the re-engineering just finished

at AIAA Headquarters. Responsibilities were shifted so a new list of names was distributed. Reports of Section operations were presented by the chairman present and the RAC IV Staff Liaison representative read reports from the absent chairmen. Our Section, being the largest, showed more activity than the others.

Information on the amount of Category 1 rebate money each section was to receive was released. The Oklahoma Section presented a Category 3 proposal to be worked in conjunction with the ASME. The thrust of the proposal was to sign-up a significant number of new members at a joint AIAA/ASME function. Our Houston Section will be working on a plan with a similar goal in mind.

Comments from the Members

I heard many comments verbally from members on the new format of the newsletter. All were very complimentary. It has a slightly different look again this month. Send us a note about your opinions on the new look. Please e-mail Mike Sanni:

sanni_mike@email.jcnasa.gov

- or -

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Don Probe:
probe_don@A1@lock

Events or Meetings

Our October dinner meeting held at the Gilruth Center was to include a demonstration on balloon hardware. High winds cancelled the demonstration, however, the lecture and accompanying movie were very interesting.

The International Conference on Micro-Nanotechnology was a big success. Held at the South Shore Harbor Resort Hotel in League City, the conference attracted more than 200 attendees. The conference was sponsored jointly by AIAA, Aerospace Corp., and NASA.

Our meeting on November 16, 1995 at the Gilruth Center featured Mike Lounge, Director of Space Operations, Spacehab, Inc. Mike spoke about commercial operations in Space.

Technical Symposium 1996

The initial planning meeting for the 21st Annual Technical Symposium was held by Charles Teixeira, VC Technical and four committee members. Initial consensus on the theme seems directed at new approaches and tools for project management and engineering.

Lunch-n-Learn

The In Space Imaging and Astronaut Observations Technical Committee will hold a Lunch-n-Learn on December 4, 1995 at 11:00 am at JSC building 4S, Room 6417. The speaker will be Dr. David Halpern from Jet Propulsion Laboratory speaking on Satellites, Oceanography, and society.



Wallet Card

- by Mike Sanni

Last month we attempted to redo the wallet card which didn't make it through exactly as we wanted, the first time. Unfortunately, we were a tad off this second time as well. So, if at first (& second) you don't succeed . . . reprint.

I mention this because this is your opportunity to update any or all information relating to you. Please check last month's Horizons and if you see that your name was misspelled or your telephone number, fax or e-mail address was incorrect, here is your chance to get it right. Please call Mike Sanni at 280-2565 or e-mail me:

sanni_mike@semil.jsc.nasa.gov



Newsletter Procedure

To expedite the production of the new Horizons newsletter, I thought I might give you a few easy guidelines:

- Type your article in MS Word. (PC or Mac) and save it to a diskette. Bring it to Don Probe: 333-6278 or Mike Sanni: 280-2565.
- OR type your article directly into e-mail and send it (I can then cut and paste this into MS Word).

sanni_mike@semil.jsc.nasa.gov

- When typing your article use:
 - Times font (11pt)
 - no tabs or indents
- Please bring any photos for the newsletter to Don Probe or Mike Sanni

- Additionally, I have set up a screen name on America On Line for those of you who have that on-line service. You may send any info, textual or photographic (please send tifs - Mac or PC) to AIAANEWS or on internet use aiaanews@aol.com

If you have any suggestions as to how I might make getting articles and/or photos to me, please let me know. Thanks.



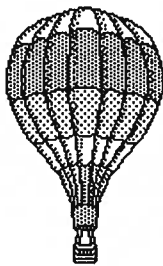
Committee News

Balloon Demo Scheduled at the October Dinner Meeting Spoiled by Winds

- by Steve Scheer

The original schedule for the October Dinner meeting of the Houston Section of AIAA, included a hot air balloon demonstration on the Gilruth Center grounds at 5 p.m. However, the winds were too high causing us to cancel the demonstration.

Social time started at 6 p.m. Dinner was served at 6:45 p.m. and the program started at 7:30 p.m. with presentation of the AIAA Distinguished Achievement Awards to Mr. Steven Zobal and Mr. Tom Mulder. Mr. Steve Lombardi was introduced and provided a short introduction followed by a 30 minute video from the 1993 Albuquerque Balloon Fiesta. The video was both entertaining and educational. The video included a large amount of events footage but also had sections which briefly described the different parts of a balloon and how they function. Additionally,



Mr. Lombardi provided some instrument packages for those wishing to see them. He concluded with a brief description of the new Space Shuttle balloon (pictured on the meeting flyer). Mr. Lombardi is one of two pilots of the Space Shuttle balloon. The balloon was a big hit at this year's Albuquerque Balloon Fiesta, being called the "shape" of the year. Finally, Mr. Lombardi provided some free handouts describing the Space Shuttle balloon, as well as information for becoming involved in ballooning in the houston area.

Membership Letters

- by G. Janson

Letters went to over 30 presidents and CEOs of local aerospace companies and aerospace-affiliated small businesses regarding membership in the AIAA. Each was provided a flyer for posting in breakrooms or dining halls and distribution at staff meetings.



Another 15-20 companies have been designated for similar correspondence. Call to all members! Do you know of notable personalities in the local (Houston/ Galveston) universities/colleges who would make good starting points for more student members? If so, please contact me.



NASA Budget Authority - Forecast - FY96 to FY2005

(in billions of FY96 dollars)

Source: 1995 EIA 10-Year Forecast

CATEGORY	91	92	93	94	95	96	97	98	99	0	01	02	03	04	05
Space Station	2.20	2.24	2.44	2.23	2.10	2.10	2.04	1.99	1.93	1.85	1.82	1.70	1.60	1.50	1.30
Space Transportation	4.98	5.02	4.82	4.20	3.57	3.85	3.70	3.60	3.50	3.45	3.50	3.50	3.55	3.65	3.70
SUBTOTAL - HUMAN SPACE FLIGHT	7.18	7.26	7.26	6.43	5.67	5.95	5.74	5.59	5.43	5.30	5.32	5.20	5.15	5.15	5.00
Space Science	2.88	3.15	3.21	3.79	4.05	3.41	3.11	3.01	2.72	2.60	2.58	2.65	2.70	2.70	2.75
Research & Technology	1.84	2.23	1.54	1.72	1.57	1.39	1.20	1.10	1.00	1.00	1.00	1.05	1.05	1.05	1.10
SUBTOTAL - SCI/AERO/TECH	4.72	5.38	4.75	5.51	5.62	4.80	4.31	4.11	3.72	3.60	3.58	3.70	3.75	3.75	3.85
SUBTOTAL - MISSION SUPPORT	4.17	3.45	3.58	3.45	3.58	3.05	2.75	2.60	2.45	2.30	2.30	2.30	2.30	2.30	2.35
TOTAL FORECAST - CONSTANT FY96 \$	16.07	16.09	15.59	15.39	14.87	13.80	12.80	12.30	11.60	11.20	11.20	11.20	11.20	11.20	11.20
TOTAL FORECAST - REAL YEAR \$ (Actuals through FY95)	13.87	14.34	14.32	14.55	14.46	13.80	13.15	12.97	12.59	12.52	12.91	13.32	13.75	14.22	14.70
NASA Deflator/Inflator	0.863	0.893	0.918	0.945	0.973	1.000	1.027	1.055	1.085	1.118	1.153	1.189	1.227	1.269	1.312
Percentage Change	3.3%	2.8%	2.8%	2.9%	2.7%	2.7%	2.7%	2.7%	2.9%	3.0%	3.1%	3.2%	3.2%	3.4%	3.4%

AIAA Calendar

The AIAA 1995-96 Calendar is intended to encompass all Houston Section events and significant dates. This includes Executive Council meetings, which are open to interested members, and Horizons deadlines. It will also include committee meetings, Lunch & Learns and similar events if Horizons hears about them in time for inclusion. Please send pertinent details to Don Probe, LMES/B14.

November

16 - Thursday
Monthly dinner meeting.
"Commercial Activities in Space" - Mike Lounge of Spacehab, Inc.
Gilruth Center, 5:30/6:30/7:30.

30 - Thursday
Executive Council meeting. 5:00 PM,
Center for Advanced Space Studies.

December

13 - Wednesday
Monthly dinner meeting.
NASA Deputy Administrator's Reception.
Gilruth Center, 5:30/6:30/7:30.

18 - Monday
Horizons inputs for January due COB.

January 1996

18 - Thursday
Executive Council meeting. 5:00 PM,
Center for Advanced Space Studies.

22 - Monday
Horizons inputs for February due COB.

25 - Thursday
Monthly dinner meeting.
Program TBD.
Gilruth Center, 5:30/6:30/7:30.

February

15 - Thursday
Executive Council meeting. 5:00 PM,
Center for Advanced Space Studies.

22 - Thursday
Monthly dinner meeting.
Program TBD.
Gilruth Center, 5:30/6:30/7:30.

26 - Monday
Horizons inputs for March due COB.

March

21 - Thursday
Executive Council meeting. 5:00 PM,
Center for Advanced Space Studies.

25 - Monday
Horizons inputs for April due COB.

28 - Thursday
Monthly dinner meeting.
"First Hand Information on the Mir-18/STS-71 Mission"
- Norm Thagard
Gilruth Center, 5:30/6:30/7:30.

TBD
Student Paper Competition.

April

18 - Thursday
Executive Council meeting. 5:00 PM,
Center for Advanced Space Studies.

22 - Monday
Horizons inputs for May due COB.

25 - Thursday
Monthly dinner meeting.
Program TBD.
Gilruth Center, 5:30/6:30/7:30.

May

16 - Thursday
Executive Council meeting. 5:00 PM,
Center for Advanced Space Studies.

23 - Thursday
Monthly dinner meeting.
21st Annual Technical

Symposium
Gilruth Center, 5:30/
6:30/7:30.

28 - Tuesday
Horizons inputs for June
due COB.

June

20 - Thursday
Executive Council
meeting. 5:00 PM,
Center for Advanced
Space Studies.

27 - Thursday
Monthly dinner meeting.
Honors and Awards
Banquet.
Gilruth Center, 5:30/
6:30/7:30.



Membership

Interest

- by G. Janson

Does variety provide the spice of life? Perhaps tours of local hi-tech labs would enhance membership interest. Along this line, the section is investigating available advanced development facilities which would be amenable to such visits. Additionally, our younger members are being polled, as are their peers, on possible programs which would provide significant interest and involvement.



Dust

Columbia's marathon space research mission is offering new insights into the behavior of dust; how it clumps in space to form stars and how a globe-girdling cloud of it snuffed out the dinosaurs - researchers claimed Tuesday. "Why look at particles suspended in dust clouds? Well, dust clouds occur on all scales and in an enormous number of circumstances," said geologist John Marshall of NASA's Ames Research Center. His experiment aboard the Shuttle permitted scientists to observe how two distinctly different types of dust particles behaved after they were dispersed in weightlessness by Columbia crew-member Fred Leslie. "We found that particles of all different varieties behave essentially the same," Marshall said.

The experiment revealed that static electrical charges on the surfaces of dust particles draw them into clouds. The result was the same

for tiny particles of copper, which is a good conductor of electricity, and quartz, which is a poor conductor. When a similar experiment is performed on Earth, gravity pulls the particles to the ground long before the weaker static electrical forces allow them to swarm into clouds. Shuttle astronauts used eight vials of dust samples, including one containing volcanic ash from Mount Shasta in California, for the experiment. The hundreds of thousands of particles in each container were stirred with a burst of compressed air and videotaped for analysis. Astronomers believe a large comet or asteroid struck the Earth about 65 million years ago, tossing up a dust cloud that blocked sunlight on the surface long enough to kill plant life, starving the dinosaurs.



University of Houston

Cullen College of Engineering

Houston, Tx 77204

Office of the Dean

713/743-4200 Fax: 713/743-4214

Graduate Degree Programs in Industrial Engineering and Aerospace Engineering Courses Offered at UH-Clear Lake - Spring 1996

Classes begin Tuesday, January 15, 1996

Required Courses in Industrial Engineering:

INDE 6337/11934	Human Factors in Systems Design	To be announced
4:00 - 7:00 PM	Monday	
Room 3315 Bayou Bldg.		

INDE 6350/11307	Design of Artificial Intelligence Systems	Instr. M. Heller
4:00 - 7:00 PM	Wednesday	
Room 3324 Bayou Bldg.		

Courses in Aerospace Engineering

MECE 7397/11801	Engineering Allows	Instr. K. White
4:00 - 7:00 PM	Tuesday	
Room 3324 Bayou Bldg.		

MECE 7397/11304	Non-Linear Controls	Instr. K. Grigoriadis
4:00 - 7:00 PM	Thursday	
Room 1335 Bayou Bldg.		

Additional Graduate Courses Offered Via Instructional Television Received at Building 45 at NASA/JSC:

ELEE 6373/11331	Advanced Computer Architecture	Instr. P. Markenscoff
12:00 - 1:30 PM	Monday/Wednesday	

ELEE 6397/11371	Parallel Architectures	Instr. M. Herbordt
11:30 - 1:00 PM	Tuesday/Thursday	

INDE 6390/11341	Mngt. Issues in Systems Engineering	Instr. B. Ostrofsky
4:00 - 5:30 PM	Tuesday/Thursday	

INDE 7397/11363	Legal Aspects of Engineering	To be announced
5:30 - 7:00 PM	Tuesday/Thursday	

(Room assignments to be posted in Building 45/Room 148 at NASA/JSC)

Registration/Enrollment by Voice Information Processing System

November 13 - December 29, 1995

Payment Due by Mail

January 15, 1996

Prospective students must submit applications with fees along with transcripts of all previous colleges attended showing degrees posted.

Call Cullen College of Engineering at 743-4200 or NASA/JSC Training Office at 483-3075 for admission and registration information.

Space Disturbance Detected by NASA Satellite Before Reaching Earth

A NASA spacecraft detected a huge interplanetary disturbance which struck the Earth's protective magnetic field on Oct. 18, producing a magnetic storm and auroral displays, or "Northern Lights" that persisted for two days.

The phenomenon was visible in the United States as far south as Denver, according to scientists at NASA's Goddard Space Flight Center, Greenbelt, MD.

The information was relayed electronically to the U.S. Air Force and to the National Oceanic and Atmospheric Administration's Space Environment Laboratory, in Boulder, CO, where evaluators issued an updated "space weather alert" to commercial satellite operators, electrical utilities and other organizations worldwide.

"The rapid response to the Wind observations and the prompt issuance of the alert were made possible by advanced data systems, technology and networks," said Dr. Keith Ogilvie of Goddard, NASA's Project Scientist for Wind. The central processing and distribution systems

were developed and implemented by NASA and supported by the Wind science teams, NOAA, the Air Force, and international partners.

The disturbance, called a "giant magnetic cloud," was 65 million miles across and speeding toward the Earth at over 2.1 million miles per hour when it was detected at 3 p.m. EST on Oct. 18 by NASA's Wind spacecraft. Wind is an unmanned spacecraft patrolling interplanetary space 662,000 miles from Earth, pointed toward the Sun. Invisible to normal telescopes and to the human eye, the cloud was composed of magnetic fields and electrified subatomic particles ejected from the outer atmosphere or corona of the Sun.

About thirty minutes after the front edge of the giant cloud passed over the Wind probe, it swept over Japan's GEOTAIL satellite, which was located on the sunward side of the Earth in its 120,000 X 40,000 mile elliptical orbit. GEOTAIL also gathered important scientific data. Minutes later, the disturbance struck the outer limits of the Earth's magnetic

field, which acts as a protective buffer. The impact compressed the magnetic field on the sunward side of the Earth and stretched it out away from the Sun on the night side, triggering the magnetic storm and aurora.

"It was detected with instruments on Wind that sense the magnetic fields, particles and waves in interplanetary space," said Dr. Ogilvie. "This is a good example of what we had been expecting since Wind was launched Nov. 1, 1994. This wonderful observation is a great first birthday present from Wind."

A complete analysis of the Oct. 18 Wind data, and data from other spacecraft and instruments, may take months or years, but is expected to tell scientists much about how interplanetary disturbances propagate through space and affect the Earth's environment. Future disturbances are anticipated as the 11-year sunspot cycle is expected to peak shortly after the year 2000, according to NASA scientists.



Hubble Space Telescope Spinoffs

From cancer detection to oil drilling, Hubble Space Telescope (HST) technology is becoming a part of everyday life and soon may save American consumers billions of dollars each year. To nurture these spin-offs, the HST Project at NASA's Goddard Space Flight Center formed its new Commercialization and Technology Transfer Program. Working with Goddard's Office of Commercial Programs, the HST program has already produced some exciting payoffs.

When Hubble's engineers went about designing new cameras to peer at the heavens, they found existing charge coupled device (CCD) technology inadequate. In improving it, they spawned a new, non-surgical and much less traumatic breast biopsy technique that saves women time, pain, scarring, radiation exposure, and money (see Sept./Oct. 1994 Innovation). Using a needle instead of a scalpel, this procedure employs the same ultra-sensitive, large format CCDs originally developed for Hubble's

Imaging Spectrograph, an instrument to be installed on HST in 1997. The procedure, performed under local rather than general anesthesia, will reduce national health care costs by about \$1 billion annually.

Hubble's scientists did not stop there! It turns out that detecting precancerous tissue among the background structures in a mammogram is remarkably similar to finding a faint star in a blurry and cluttered telescope image. Using techniques originally developed to sharpen Hubble's fuzzy first images, medical and astronomical researchers from the Space Telescope Science Institute, Johns Hopkins and Georgetown universities are not detecting microcalcifications - a telltale sign of breast cancer - earlier than previously possible to get a head start on treatment.

But as important as sharpness is, sometimes it's raw detector power that's called for, as it is on Earth where a Hubble camera system is being tested for inspecting high voltage lines. This

camera - the most sensitive ultraviolet detector ever built for astronomy - may soon be flown by helicopter over power line poles and transformers to detect weakened insulators and other sources of escaping electricity. Market studies estimate the technique could lower significant outages and potentially save the nation \$7 billion of the \$50 billion cost per year of such outages.

All this camera technology wouldn't be much good if Hubble didn't know where it was looking. Remarkably, Hubble's need for new, rugged, solid state gyroscopes have led to design improvements enabling their use in tracking the location of drill heads underground.

So the next time you look up into the night sky and wonder what's out there, remember Hubble is working for you and making life back here just a little better. And maybe the next discovery Hubble makes will be the one that saves a life.



AIAA Houston Section Organization - 1995-96

Secretary
Jeff Sugano
483-2869

VC - Operations
Merri Sanchez
483-4470

Education/Prof. Dev.
S. Voss
483-4841

Honors & Awards
J. Stramler
244-8531

Membership
G. Janson
280-2708

Pre-college Outreach
M. Barret
483-4540

Programs
S. Scheer
333-6186

Young Members
J. Kraft
483-8285

Public Policy
S. Brandt
280-4730

Publications
Mike Sanni
280-2565

Publicity
J. Ramakrishnan
333-4419

Scholarship
L. Swartz
282-8136

Student Activities
M. Barret
483-4540

Chairman
Don Probe
333-6278

Chairman-Elect
Clay Shadeck
280-2701

Councillors
Liz Baines
483-1551
Larry Bell
482-6357
Shirley Brandt
280-4730
Dave Criswell
486-5019
Jill Fabricant
335-1250
Carl Huss
488-6310
Gothard Janson
280-2708
Mike Sanni
280-2565
Joe Loftus
283-2194
George Niell
483-1364
Jim Oberg
337-2838
Ellen Ochoa
244-8809
Steve Scheer
333-6186
Mike Stanford
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VC - Technical
Charles Teixeira
483-4647

Automtn. & Robotics
Z. Taqvi
244-8662

Comm. & Tracking
K. Krishen
283-0695

Fluid Dynamics
R. Bhargava
983-9371

**Guidance., Nav. &
Flight Control**
J. Ramakrishnan
333-4419

History/Heritage
A. Platoff
483-2251

Artificial Intelligence
R. Savely
483-8105

Systems Engineering
G. Deiter 244-8561
J. Vollmer 244-7968

Aerospace Maint.
F. Mount
483-3723

Treasurer
Rudy Balciunas
483-3017

**In-Space Imaging &
Astronaut Obs.**
K. Lulla 483-5159

Intl Space Activities
Z. Taqvi
244-8662

**Life Sci., Space Proc.
& Human Factors**
J. Zelon 282-5325
K. Loftin 212-1434

**Materials, Structures
& Dynamics**
S. King 333-6646

Space Transportation
C. Teixeira
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**CAD/CAM &
Software**
J. Knesek 333-6129

Space Ops & Support
T. Diegelman
244-7255

Thanks Kinkos!

- by Mike Sanni

I'd like to take this opportunity to thank the kind folks at Kinkos who have graciously agreed to fold and staple our new newsletter.

I've worked with these people for years now and over the course of that time, they have never wavered in their willingness to help out and support the aerospace community here in the Bay Area.

Here again, they've offered to help out with no strings attached. However I have decided to give credit where credit is due by including a standard "thanks" to them as well as to others in the newsletter, near the "Member's Classifieds" section.

Thanks also go to Mike Rushing and his team at Lockheed Martin for the quality print job we get on the newsletter. If you're not involved in the process, you may not know all of the little details that have to be taken into consideration to produce such a publication in a short amount of time.

With teamwork like this from two groups like that, we'll consistently get a good newsletter everytime.



AIAA Online

- by Charles Teixeira

AIAA Member Services has embarked on some initiatives to bring better services to its members. One of these initiatives is called the AIAA Online. This includes establishing an AIAA world wide web homepage linking each section, technical committee and student chapter. Our section already has a homepage and the information has been passed up to Member Services so we can get linked up with the AIAA Online service. Mike Begley will work this interface for us.



Eventually, other on-line services will be added like conference registration, paper distribution, employment listings and aerospace public policy news. Further information will appear in an upcoming Aerospace America.

Any suggestions on services you think should be included on the AIAA Online??



Comet Sample Return Mission

A spacecraft designed to gather samples of dust spewed from a comet and return the dust to Earth for detailed analysis has been selected to become the fourth flight mission in NASA's Discovery program.

Known as Stardust, the mission also will gather and return samples of interstellar dust that the spacecraft encounters during its trip through the Solar System to fly by a comet called Wild-2 in January 2004. Stardust was one of three Discovery mission proposals selected for further study as part of a February 1995 announcement by NASA that a Moon-orbiting mission called Lunar Prospector had been selected as the third Discovery flight.

"Stardust was rated highest in terms of scientific content and, when combined with its low cost and high probability of success, this translates into the best return on investment for the nation," said Dr. Wesley T. Huntress Jr., NASA Associate Administrator for Space Science. "The Stardust team also did an excellent job of updating their plan to communicate the

purpose and results of this exciting mission to educators and the public.”

The Stardust mission team is led by Principal Investigator Dr. Donald Brownlee of the University of Washington in Seattle, with Lockheed-Martin Astronautics, Denver, as the contractor building the spacecraft. NASA's Jet Propulsion Laboratory, Pasadena, CA, will provide project management.

Comet Wild-2 is known as a “fresh comet” because its orbit was deflected from much farther out in the Solar System by the gravitational attraction of Jupiter in 1974. Stardust will approach as close as 62 miles to the comet's nucleus.

“Space scientists are intensely interested in comets because we

believe that most of them are well-preserved remnants from the earliest days of star and planetary formation,” Huntress said. “Stardust should also give us some unique guidance about how to focus the science we plan to conduct a few years later with a surface lander on a different comet during the international Rosetta mission.”

Stardust will be launched on an expendable launch vehicle in February 1999 for a total mission cost to NASA in real-year dollars of \$199.6 million. The return capsule carrying the dust samples would parachute to Earth for landing on a dry Utah lake bed in January 2006.

Stardust will use an unusual material called aerogel to capture the

dust samples. This porous, extremely low density material is somewhat like glass in that it is made of silica — a pure form of sand — and it has about the same melting point. Although aerogel does not absorb moisture, the strangely fluorescent substance can absorb large amounts of gas or particle matter due to its remarkable internal surface area.

The spacecraft also will carry an optical camera that should return cometary images with 10 times the clarity of those taken of Halley's Comet by previous space missions, as well as a mass spectrometer provided by Germany to perform basic compositional analysis of the samples while in-flight.



Member's Classifieds

No commercial advertisements please.

For Sale:

MacIntosh Computer Games

1. Space Quest:

A. The Sarien Encounter - \$10.00

B. Vohaul's Revenge - \$10.00

2. Citadel: Adventure of the Crystal Keep - \$10.00

3. King's Bounty - \$10.00

4. Sim Earth -

The Living Planet - \$10.00

For Sale: Samsonite hardside brown briefcase with

combination lock. Used, but in good shape. Only \$20.00.

For Sale: Smith-Corona electric typewriter with automatic character and/or word erase. Needs cleaning but in good working condition, case included, for \$30.00.

For Sale: Video Ed/it 2 - Mini video/sound mixer and enhancer. An easy way to edit and add sound to your video tapes. Brand new and in the

box - used once. Originally cost about \$100. You can have it for \$20.00.

Call Mike at 280-2565



Mike Rushing & Team - Printing; Kinkos - Folding and Stapling;
Gotthard Janson - Proofreading; Bill Geissler and Jeff Tave - Flyer



Houston Section
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Webster, TX 77598

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**DON PROBE
CHAIRMAN 1995-96**

JOINT MEETING WITH NMA

**GENERAL J. R. DAILEY
NASA Deputy Administrator**

STATE OF THE AGENCY

**Wednesday, December 13, 1995
at
Robert R. Gilruth Recreation Center
Johnson Space Center**

Dinner Meeting

**Social: 5:00 (Gym)
Dinner: 6:00 (Ballroom)
Program: 6:45 (Ballroom)**

**MENU: TEXAS BAR-B-QUE BUFFET
(Includes Beef, Chicken & Sausage)**

MEMBERS/NON-MEMBERS	\$10.00
STUDENTS/YOUNG MEMBERS	\$ 5.00
UNEMPLOYED MEMBERS	\$ 5.00

**TANYA BRYANT
483-1175
NASA**

**MISTY ARMSTRONG
333-4419
DYNACS**

**BARBARA WEEMS
333-6276
LOCKHEED MARTIN**

**CALL ONE OF THE ABOVE FOR RESERVATIONS
DEADLINE IS THURSDAY, DECEMBER 7, AT 12:00 NOON.
ANY CANCELLATIONS ARE REQUIRED PRIOR TO DEADLINE. NO-SHOWS WILL BE BILLED.
ALL ARE WELCOME.**

DINNER RESERVATIONS ARE NOT REQUIRED FOR ATTENDING THE PROGRAM ONLY.