

Horizons

Houston, Texas

December 1994

Chairman's Corner

George Nield
Chairman

THIS LAST MONTH has been one of the busiest I can remember for the local Section. Two Lunch & Learns were put together by our technical committees: one on the "Geologic Application of Landsat Imagery" and one on "Man-Made Orbital Debris." We also sponsored a very interesting seminar on financial management with speakers from Charles Schwab & Co.


Several members of the Section participated in a field trip to Texas A&M, where we had a chance to visit with the members of the AIAA Student Branch, take a tour of the low-speed wind tunnel facilities, and take in an exciting football game with Rice. And after a nine-day delay due to torrential rains, we had an opportunity to hear Dr. Bonnie Dunbar give a fascinating presentation on her training at Star City, Russia.

I hope you were able to participate in one or more of these events; if not, you really missed out! We are trying to offer a variety of different activities in the hope that there will be at least something that appeals to each of our members. If you have any suggestions for events that you would like to see us sponsor, please let us know.

I attended a meeting of the AIAA Regional Advisory Council (RAC) in San Antonio on October 24. André Sylvester, Region IV Director, was there along with several Deputy Directors, Karen Thomas from AIAA Headquarters in Washington, and representatives from the North Texas, Southwest Texas, and Oklahoma Sections. The Albuquerque, Holloman/Alamogordo, and White Sands Space Harbor Sections are also in our region, but were unable to send a representative to the meeting. We got a chance to hear about some of the goings on at the national level and then went around the table, reporting on the status of the individual sections. I

talked about our progress to date and our plans for the rest of the year, and described our proposal to hold a special Section event at the Lone Star Flight Museum in Galveston next spring. Based on our request, the Committee agreed to help out with the funding for the proposal so that we can keep the overall costs down. It should be a very enjoyable evening! We'll let you know more about it once we have had a chance to work out the details.

Later on that week, Clay Shadeck, Houston Section Membership Chairman, and I had the opportunity to visit with Dr. Carolyn Huntoon, JSC Director. We talked with her about AIAA's plans for the year and offered our assistance in supporting the various ongoing activities at JSC. She mentioned that she is a regular reader of *Horizons*, but confessed that she had never been able to successfully solve the Cranium Cruncher! We'll have a chance to hear more from Dr. Huntoon at our December dinner meeting.

Looking ahead a little bit, we're planning some exciting new initiatives for the Section which will take advantage of the World Wide Web protocol on the Internet system. I hope to be able to tell you more about it next month. In the meantime, if you have any comments, complaints, ideas or suggestions, give me a call at 713/483-1364, or send a e-mail note to gnyield@jscprofs.nasa.gov. I'd love to hear from you! 

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Committee News

Guidance & Control TC

Jayant Ramakrishnan
Guidance & Control TC Chairman

THE GUIDANCE, NAVIGATION & CONTROL TC had a showing of the video "Soviet Mir Space Station" for the Dynamics and Control working group. The 20-minute film, shown at the International Astronautics Federation meeting in 1986, details the Mir space station.

We plan to have a video on the Russian docking mechanism in January 1995. We also plan more Lunch & Learn seminars starting in January. ♣



Wallet Card Redux

Several committee chairs have been added since the October issue, and a few addresses and phone numbers have changed. A revised wallet card with names, addresses, phone and fax numbers, and e-mail addresses can be found attached to this issue. Cut it out and save it so you'll know who to contact for questions, complaints, etc. ♣

Horizons is the monthly newsletter of the Houston Section of the American Institute of Aeronautics and Astronautics. It is created by members of the Houston Section and reproduced at the Houston offices of Lockheed Engineering and Sciences Company. Opinions expressed herein, other than by elected Section officers, are those of the authors and do not necessarily represent a position of AIAA or of the Houston Section. Please address all correspondence to the Vice-Chairman, Operations, Mike Begley, LESC/C87, or to the Editor, Lou Livingston, 1911 Pepper Hill, Houston, TX.

Student Branch News

JOEL KORKOWSKI, Chairman of the AIAA Student Branch at Texas A&M, reports that the group has gotten off to a good start this year. On September 20, they conducted a special "Meet the Professors" session. On October 6, Loren Shriver from the Space Shuttle Program was the guest speaker for a student gathering. The first in a series of informal weekly football games was held on October 13. The students took a field trip to Ellington Field on October 16 to see the "Wings Over Houston" air show. On October 22, the Branch served as hosts for members of the Houston Section who were visiting the campus for a tour, lunch and the football game with Rice.

This year's Student Branch officers are:

Chair: Joel Korkowski

Vice Chair: Chad Ford

Publications: Vincent Aguilar

Speakers/Programs: Darin Smith

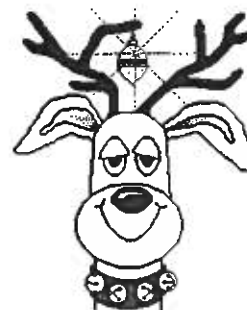
Field Trips/Social Events: Cathy Bahm

Membership/Finance: Robert Worsham

Department Representative: Shayne Westover

Faculty Sponsor: Dr. Donald T. Ward

In a note which accompanied his report, Joel observed that "the thing I appreciate most about the AIAA is the interaction I have had with the professional members and our guest speakers. Our goal as students is to prepare to embark on a fulfilling career, and to get to speak with many different people in the aerospace field has taught me more about the opportunities out there than school could. Thank you for your cooperation with us and the encouragement you have been to us." ♣




Education/Career Enhancement

Jayant Ramakrishnan
Education/Career Enhancement Chairman

IN OCTOBER, the Education and Career Enhancement Committee held a Financial Management and Computerized Investing Seminar. The seminar was held at the Center for Advanced Space Studies (CASS) and was well attended. The seminar covered options for retirement planning and was followed by a "live" session featuring Street Smart software. Janice Miller and Keith Powell of the Houston office of Charles Schwab & Co. presented the workshop. AIAA members who would like a copy of the handout or more information on financial planning services can contact them at (713) 623-8609.

On November 8, Jay Williams of Neosoft presented an Internet Seminar at CASS. Using the World Wide Web, Jay showed the JSC and Texas A&M home pages, and, on audience request, a satellite map of the U.S. with data on current weather in Washington, D.C. Jon Luckstead of the JSC Library circulated a partial listing of books on Internet available at JSC and had some books on hand for browsing. The seminar drew a large audience and lots of questions.

Upcoming events include a seminar by Dale Carnegie Associates in January and a MATLAB course in February or March. We are also please to welcome Tim Straube of JSC as a committee member.

We now have the following cassettes and videos available for checkout. Contact Bill Best (282-6970), Steve Zobal (244-4231), or Jeff Tave (333-7007) to check out these tapes. Rental is \$1 per week. 

1-Hour Audio Tapes

- Decision Theory
- Dynamic Programming
- Fundamentals of Precise Attitude Determination of Satellites
- Linear System Analysis: Classical Versus Modern Techniques
- Problems in Orbit Transfer
- Vectors
- Investment Programs
- Boundary Layers
- Low Speed Wing Theory

2-Hour Audio Tapes

- Flight Computer Design
- Linear Quadratic Design Techniques
- Manual Control
- An Introduction to Navigation Systems
- Nuclear Propulsion
- Probability, Random Processes and Estimation Theory, with Aerospace Applications
- Introduction to Stability Theory
- Survey of Basic Optimization Techniques

12-Hour Audio Tapes

- Aeroelasticity

Management Audio Tapes

- Effective Team Building
- Assertiveness Training for Managers
- How to be an Effective Middle Manager
- Effective Team Building
- Creative Problem Solving
- The 7 Habits of Highly Effective People - N
- How to Build Self-Esteem - N
- The Best of SkillPath - N

Video Tapes

- Thunder in the Gulf
- SR-71: The Secret Vigil—BlackBird
- BluePrint for Space
- Aviation Week
- X-Planes - N *
- The Hubble Space Telescope- N *
- Soviet Mir Space Station - N *
- How to Get More Job Satisfaction - N *

Books

- How to Deal with Difficult People
- Supervisory Guide

* Available until November 30, 1994

N - New

Events

October Dinner Meeting

Lou Livingston
Editor

THE MONTHLY DINNER MEETING on October 27 featured astronaut Bonnie Dunbar describing her training at Star City outside Moscow for the STS-71 docking mission to the Russian Mir space station.

There are cultural differences between U.S. and Russian training methods that require a good deal of adaptation. For example, printed training materials are little used; information is presented orally (in Russian) and the trainee must learn to take copious notes. Attitudes also seem more casual than in the U.S. in some ways: one must get used to children wandering around during training exercises.

The presentation was thoroughly enjoyed by the 65 or so attendees, even though the thermostat was set a bit low for us warm-blooded Texans. If you had been there, you would have enjoyed it too. Join us next month!



A&M Field Trip a Rousing Success!

Norm Chaffee

I AM PLEASED TO REPORT the successful accomplishment of the Houston Section field trip to Texas A&M University on Saturday, October 22, 1994.

Thirty-four reservations were received as a result of the Section flyer announcing the field trip and 29 actually made the trip by chartered bus.



The key trip components included a joint activity with the A&M AIAA Student Chapter. The visiting Houston Section contingent arrived at the University at 10 AM, met the student chapter and their advisor, Dr. Don Ward, and was provided a tour of aerospace facilities. The group was able to tour the low-speed wind tunnel facility and was briefed on an advanced avionics project being integrated into one of the five university research aircraft.

Subsequently, the tour group enjoyed a joint catered lunch with the student chapter and received a video briefing on the University and on the activities of the Aerospace Engineering Department.

The day's activities concluded with group attendance at the Texas A&M—Rice football game at Kyle Field, where the Aggies were victorious in a hard-fought game, 7-0.

The group returned to the Houston departure point at 6:15 PM after a 10½ hour excursion which was enjoyed by all.

Dr. Don Ward describes flight testing with the university's fleet of aircraft to A&M students and visitors from the Houston Section during the field trip Oct. 22.

Photo by George Nield

Book Corner

Mir Hardware Heritage

David S. F. Portree
History/Heritage Committee

THE JSC INFORMATION SERVICES DIVISION will soon make available to JSC employees and contractors a new book entitled *Mir Hardware Heritage* (JSC 26770). The book details the major hardware elements making up the Mir complex—Mir base block: Kvant, Kvant 2, and Kristall modules, and the Soyuz-TM and Progress-M vehicles. The 187-page book features 65 drawings of Russian and Soviet hardware, three hardware family trees, and over 200 visual icons describing day-by-day 17 years of operations at the Salyut 6 and 7 and Mir space stations (January 1977-March 1994). There is also a comparative chronology of U.S. and Soviet/Russian spaceflight. An indexed NASA Reference Publication version updates to November 1994 will be available in early 1995 to persons inside and outside the JSC community. For additional information, contact David S. F. Portree at 483-6707. **H**

Skunk Works

Bill Best

IN 1993, AIAA MEMBERS who attended the dinner meeting April 29 really got a treat. Ben Rich, who was Kelly Johnson's successor at the Lockheed "Skunk Works" (officially the Advanced Research Projects Division) gave a talk on his career. We learned a lot about the history of the U-2, the SR-71 and the F-117A, and also that a book was on the way. Well, the book is here, *Skunk Works* by Ben Rich. I got mine at Bookstop for \$20. I encourage those who are interested in a good story to get this fascinating book. **H**

Cranium Cruncher

Lou Livingston
Editor

November Cruncher

Which is greater, π^e or e^π ? Hint: $e < \pi < 2e$.

Solution

For convenience, let $\pi/e = p$. Note (from the hint) that p is between 1 and 2. Then

$$e^\pi = e^{ep} \text{ and } \pi^e = (ep)^e$$

Then

$$\log(e^\pi) = ep \log e = ep$$

and

$$\log(\pi^e) = e \log(ep) = e(1 + \log p)$$

where \log denotes the natural logarithm.

Using a standard series expansion,

$$\log p = (p-1) - (p-1)^2/2 + (p-1)^3/3 - \dots$$

where $0 < p \leq 2$. Since each alternating term is less than the preceding one,

$$\log p < p - 1$$

or

$$1 + \log p < p$$

Since $\log(e^\pi) > \log(\pi^e)$, it follows that $e^\pi > \pi^e$.

No one submitted a solution (right or wrong). Here's an easy one for a change.

December Cruncher

Both the area and the volume of a certain sphere are four-digit integers times π . What is the radius of the sphere?

Send your solutions to Mike Begley, LESC/C87, or e-mail either to begley@L14H13.jsc.nasa.gov or louliv@aol.com by December 19. A random selection from the correct solutions wins a free dinner at an upcoming monthly Houston Section meeting. **H**



Sixth Space Logistics Symposium

THIS CONTINUING SERIES of highly respected and timely symposia will once again convene representatives of government, industry, academia and the international community in a forum that provides an opportunity to focus upon and address relevant space logistics issues and solutions.

The Sixth Space Logistics Symposium will consist of a series of unclassified plenary and concurrent paper sessions, as well as technical workshops, exhibits, and tours of local facilities. The symposium will cover a wide range of topics on interest to the civil, military, commercial, and international space logistics communities.

Complete details of the symposium may be found in the December issue of *Aerospace America*.

7 - Wednesday

IEEE videoconference.

"Maximizing Productivity: Redesigning the Engineer & Designing for Maintainability."
Gilruth Center.

8 - Thursday

Monthly dinner meeting.

Director's Reception.

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

19 - Monday

Horizons inputs for January due COB.

January

16 - Monday

Horizons inputs for February due COB.

19 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

26 - Thursday

Monthly dinner meeting.

Program TBD.

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

February

9 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

16 - Thursday

Monthly dinner meeting.

Program TBD.

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

21 - Tuesday

Horizons inputs for March due COB.

22-24 - Wednesday-Friday

AIAA/SOLE Sixth Space Logistics Symposium.

South Shore Harbour Resort & Conference Center.

Info: Steve Zobal, 244-4231.

AIAA Calendar

THE AIAA 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 Mike Begley, LESC/C87.

December

Nov. 30-Dec. 2 - Wednesday-Friday

JSC/IEEE/AIAA workshop.

"Virtual Reality."

Gilruth Center.

1 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

CALENDAR (from page 6)

March

16 - Thursday

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

23 - Thursday

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

27 - Monday

Horizons inputs for April due COB.

28-30 - Tuesday-Thursday

AIAA Computing in Aerospace Conference.
St. Anthony Hotel, San Antonio, TX.
Info: Jim Spiegel, 301/805-0537 or e-mail
jspiegel@gsfcmail.gsfc.nasa.gov.

TBD

Student Paper Competition.

April

3-6 - Monday-Thursday

Life Sciences & Space Medicine Symposium.

20 - Thursday

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

24 - Monday

Horizons inputs for May due COB.

27 - Thursday

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

May

18 - Thursday

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

22 - Monday

Horizons inputs for June due COB.

25 - Thursday

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

TBD

Annual Technical Symposium.

June

15 - Thursday

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

22 - Thursday

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

H



Horizons

OUTSTANDING SECTION AWARD

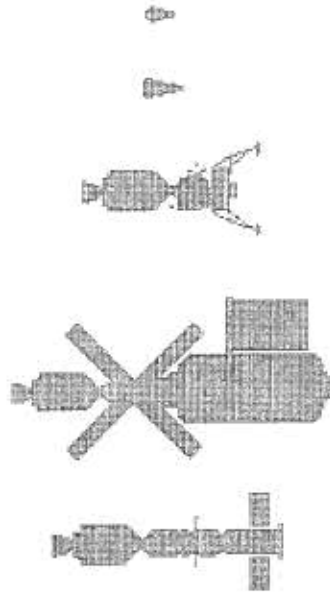


- 1975-1976
- 1976-1977
- 1979-1980
- 1980-1981
- 1981-1982
- 1983-1984
- 1986-1987
- 1988-1989

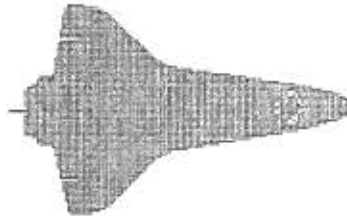
SECTION SPECIAL EVENT AWARD



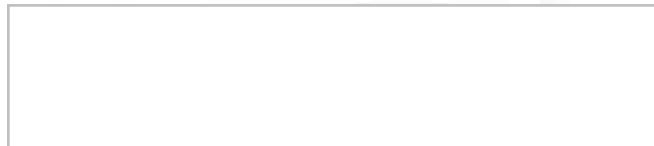
- 1971-1972
- 1972-1973
- 1979-1980
- 1981-1982
- 1983-1984
- 1985-1986
- 1988-1989



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GEORGE NIELD
CHAIRMAN 1994-95

American Institute of Aeronautics and Astronautics

HOUSTON SECTION P.O. BOX 57524 WEBSTER, TEXAS 77598

Thursday, December 8, 1994

**Annual Director's Reception
STATE OF JSC**

Dr. CAROLYN L. HUNTOON
Director, Johnson Space Center



PRESENTER

Dr. Carolyn Huntoon was selected to be the sixth Director of JSC this year. She has spent the past 25 years on the frontiers of space exploration beginning her research into the human physiological aspects of space flight during the Gemini and Apollo programs as a graduate student. Dr. Huntoon joined NASA in 1968 through a National Research Council post-doctoral research fellowship. She has been NASA senior research physiologist specializing in endocrine and biochemical research during the extended duration Skylab and Spacelab programs. Her career has been broadened by a variety of assignments within the Agency. She was chosen as Chief of the Biomedical Laboratories Branch at JSC. From the start of the Shuttle program, she has participated in astronaut selection boards. Dr. Huntoon served as Associate Director of JSC from 1984 to 1987. In 1987, she was named as Director of Space and Life Sciences.

As a result of her expertise, Dr. Huntoon has served as consultant to other Government agencies. During her career, she has authored over 200 scientific publications on human space flight physiology. NASA has recognized her work with numerous honors and awards, including the Scientific Achievement Medal, Exceptional Service Medal, Outstanding Leadership Award, and Distinguished Service Medal.

DINNER MEETING

SOCIAL: 5:30
DINNER: 6:30
PROGRAM: 7:30

MENU: 8 oz. ROAST BEEF AU JUS

MEMBERS & SPOUSES	\$ 11.00
NONMEMBERS	\$ 12.00
STUDENTS/YOUNG MEMBERS	\$ 5.00
UNEMPLOYED MEMBERS	\$ 5.00

**ROBERT R. GILRUTH RECREATION CENTER
JOHNSON SPACE CENTER**

FRAN JAMISON
333-6277
LOCKHEED

TANYA BRYANT
483-1175
NASA

SARAH LEGGIO
282-3160
ALLIEDSIGNAL

CALL ONE OF THE ABOVE FOR RESERVATIONS.

**NOTE: RESERVATION DEADLINE IS MONDAY, DECEMBER 5th, AT 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.



Houston Section

Officers 1994-1995

Rev. 11/13/94

OFFICERS:

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Scholarship

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REGION IV DIRECTOR

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Wallet Reference Card Update 1994-95

The attached wallet card contains updated names, addresses, and phone and fax numbers for Houston Section officers, councillors and committee chairmen. Please save for future reference.

First cut along the outside lines. Then fold at the ticks on the side of the card, starting at the bottom.

OPERATIONS COMMITTEES:

<u>Name</u>	<u>Address</u>	<u>E-Mail</u>
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Tom Mulder		
Communications & Publicity		
Suzan Voss		

Honors & Awards

Palmer Chiu

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