

# *Horizons*

Houston, Texas

February 1995

## *Chairman's Corner*

**George Nield**  
**Chairman**

As I mentioned in last month's issue of *Horizons*, we have started receiving computer disks from AIAA Headquarters containing information on our members. We have successfully loaded the information into a local database, which we hope will allow us to plan our programs to better serve the needs of our members. It has been interesting to use the database to analyze some of the characteristics of the Section as a whole. Over the next several months, we plan to share some of these characteristics with you in our newsletter. Last month, we gave the breakdown of our membership based on professional interest areas. This time, let's take a look at our members' organizational affiliation.


A number of different companies are represented in our Section, with quite a few having only a handful of members each. Some of these are small businesses and consulting firms; others are large companies which just don't happen to have many AIAA members. There are also quite a few members who did not report a company affiliation on their membership application or renewal form; some of those people are currently unemployed, while the remainder simply left that part of the form blank. Based on the information we do have, here are the companies with the largest number of AIAA members:

NASA - 259  
Lockheed - 96  
Retired - 81  
Rockwell - 70  
McDonnell Douglas - 54  
Texas A&M - 38  
Loral - 30  
University of Houston - 18  
IBM - 16  
Rice University - 12

Boeing - 12  
Space Industries - 10  
Barrios - 8  
Hernandez Engineering - 7  
Grumman - 7  
Oceaneering Space Systems - 6  
Martin Marietta - 5  
General Electric - 5  
Eagle - 5

As I look over these numbers, I am struck by a couple of things. First of all, there are a lot of big aerospace companies on this list that don't appear to have many AIAA members. Second, even in the organizations with a large number of members, like NASA, Rockwell, and Lockheed, only a small fraction of the employees belongs to our society. I'm sure there are many reasons for people not belonging, but I suspect that a lot of folks are either not aware of the benefits, or else they are just not sure whether participating in a professional society is something that their management views favorably.

For those of you who do currently occupy senior management positions, I'd encourage you to make sure your employees know that membership in a professional society like AIAA is something you support. If you would like to talk about some of the benefits AIAA can offer employers, please give Clay Shadeck, our Membership Chairman, or me a call. We would be happy to meet with you at your convenience to discuss it. And for the rest of our members, do your colleagues and your professional society a favor and talk up AIAA to your co-workers. They'll benefit and you will too!

Once again, if you have any questions, comments, complaints, or suggestions, give me a call at (713) 483-1364, or send an e-mail note to [glnield@jscprofs.nasa.gov](mailto:glnield@jscprofs.nasa.gov). I'd love to hear from you! 

## Region Director's Corner

**André J. Sylvester**  
**Director, Region IV**

As your Region IV Director, I recently attended the AIAA National Board and Region and Sections Activities Committee meetings in Reno, Nevada. These groups, whose members you elect, meet three times a year to plan and approve the AIAA National budget, develop strategies for providing services to the members, and provide direction for AIAA to continue providing leadership in the aerospace industry.

The Region and Section Activities Committee (RSAC), chaired by Christine Anderson, Vice-President, Member Services, is the most active with respect to the local sections. I am one of six regional directors that represent the interests of the members at the national level. Current RSAC initiatives include development of career planning information, dissemination of resumes and job placement information, and enhancement of section programs. The RSAC directors vote every year on the Section awards, which are now presented at the Aerospace Sciences meeting in Reno in January of each year.

The Board of Directors is actively involved in setting the future direction of the Institute. Under the leadership of Dr. Malcolm Currie, AIAA President, the Board has developed the AIAA Vision and

Mission Statement, which lays out the major area of emphasis for Institute activities.

Building on the strength of AIAA technical meeting programs, and extending AIAA's influence in the international arena, the Board intends to fulfill the vision of being "the world's leading professional society in the broad areas of aeronautics and astronautics, and the preeminent worldwide aerospace information resource."

My closing comments are regarding the upcoming AIAA National Elections. I am stepping down after a three year term as Director of Region IV, and I would like to endorse Neil Blaylock of the Southwest Texas Section for the position. Neil has served as my Deputy Director for Membership, and has recently been named Chairman of the National Membership Committee. Neil has done an outstanding job, and I heartily recommend him to replace me as Region IV Director. Vote for Neil Blaylock on the National Ballot for Region IV Director!

## In This Issue...

Chairman's Corner .....	1
Region Director's Corner .....	2
Membership Report .....	3
E-mail News .....	3
Crossword .....	4
Events .....	5
Space Logistics Symposium .....	5
Space Art Exhibit .....	5
Space Institute Classes .....	5
Student Paper Competition .....	6
December Dinner Meeting .....	6
Operability Workshop .....	6
NASA Facility Tour .....	6
Cranium Cruncher .....	7
AIAA Calendar .....	7

*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.

## Membership Report


**J. Clayton Shadeck**  
**Membership Chairman**

### Membership Update

IN 1994, AS IN PAST YEARS, we both added and lost Section members. We still remain just below the 1000 member threshold for qualification as a "large" section.


We did make some progress in creating a more accurate and usable membership roster. Several of you received the most current list of members at your particular organization and were asked to make needed corrections. Thanks to all of you who responded. Your inputs were passed along to AIAA National Headquarters and we should have a much better list by now. This list, sorted by organization, can help us with knowledge of member resources available for Section functions.

Another recent initiative was a special invitation made to small businesses in the area. In the past, larger organizations have been the mainstay of the Houston Section. A letter was sent to several local small businesses describing the advantages of AIAA participation and encouraging membership.

Many thanks to those of you who responded to my request to be "Membership Champions" in your organization. If there are others who would like to help in this way, please contact me at 280-2701, and I will send you a membership "care package." This includes brochures, applications, and lobby materials to be used on bulletin boards, in lobby areas, or at staff meetings, to encourage membership in the AIAA. 

### Free AIAA Dinner!


AS YOU PROBABLY NOTICED, we offered a free ticket to any 1995 AIAA Dinner Meeting to new members who applied at the January 27 meeting. We now would like to extend a similar offer to members who encourage new member applications. This offer will be good through February. Any member who brings in new members during that

time frame will receive a complimentary meal at an upcoming dinner meeting of their choice. Please have the new member route their application through me so I can know to award you your dinner certificate. Bring two new members in and receive two dinners! 



### AIAA News Flashes Underway

**James Oberg**  
**Councillor**

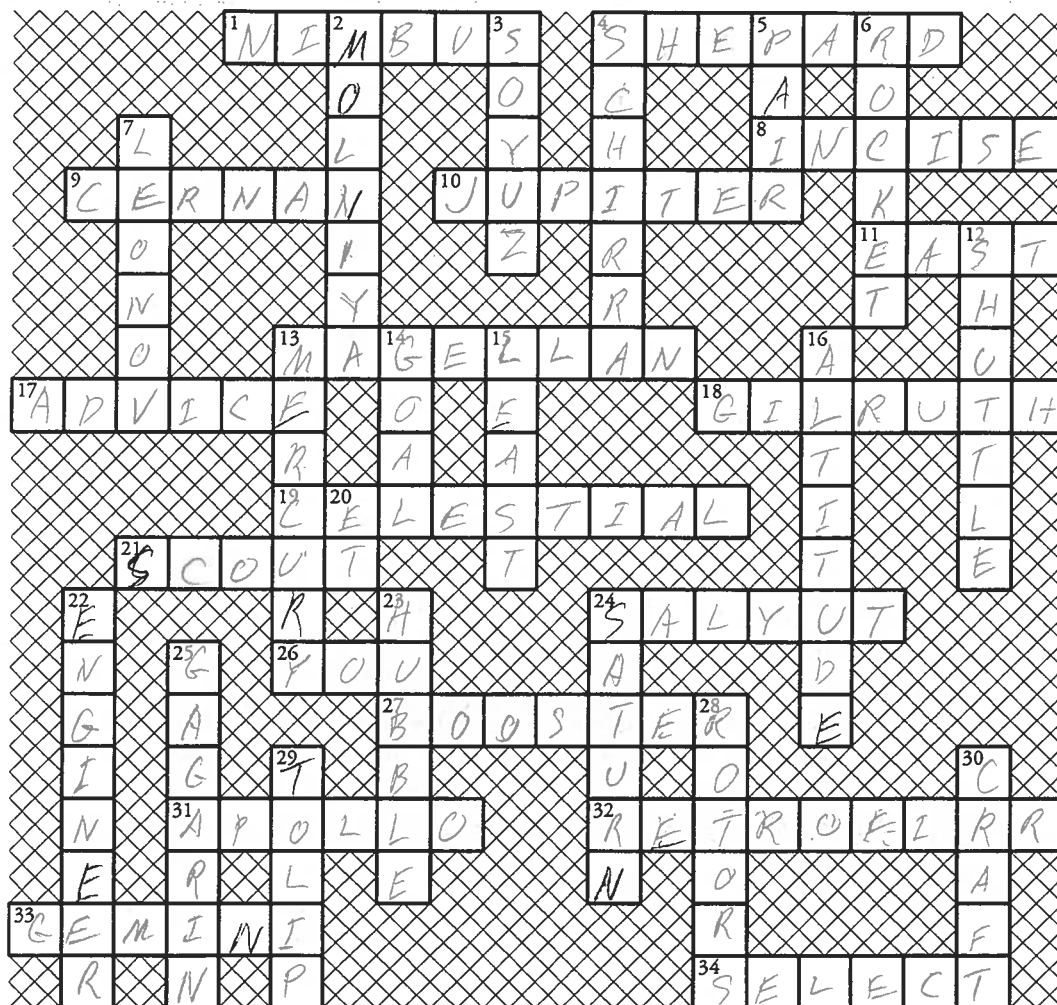
THE AIAA HOUSTON SECTION has recently begun a new initiative to send out regular electronic mail messages to interested members. About once a month, or whenever there is some late-breaking news, we plan to send out an AIAA News Flash to participating members. Recent messages have included notices of book-signing sessions by Apollo astronauts, information about a special space photography exhibition, and notices of upcoming Lunch & Learns and dinner meetings. If you would like to start getting these notices, just write to Jim Oberg at jamesoberg@aol.com and we'll add you to the distribution list. 

### Correction (Again)

**Lou Livingston**  
**Editor**

Jim McLane has once again suffered, or rather is still suffering, the editor's dyslexia (my only plausible excuse) in *Horizon's* wallet card listing of phone numbers and addresses. Please note that his e-mail address is FWGD81A@prodigy.com, and not as it was listed in last month's card. Please note a few other revisions and corrections in this month's attempt to get it right (for a change).

## Crossword



### Across

1. Old weathersat
4. Astronaut Alan —
8. Carve
9. Astronaut Gene —
10. Chief Roman deity
11. Due —
13. Late planetary probe
17. Counsel
18. Former JSC Director Robert —
19. Heavenly
21. Old solid rocket
24. Soviet space station
26. Not I

### Down

27. Supporter
31. Roman sun god
32. Beginning of the end?
33. Castor and Pollux
34. Choose
2. Russian comsat
3. Russian spacecraft
4. Astronaut Wally —
5. See 33 across
6. What goes up must come down
7. Cosmonaut Alexei —
12. Bus

### Across

13. Messenger of the gods
14. Aim
15. — squares
16. How high is up?
20. Not of this world (abbr.)
22. Design
23. Astronomer Edwin P. —
24. Roman god of agriculture
25. Cosmonaut Yuri —
28. Spinners
29. Backward navigator?
30. Former JSC Director Chris —

(Solution on page 9)


## Events

### **Sixth Space Logistics Symposium**

**Steve Zobal**  
**SSLS Co-Chair**

THE SIXTH SPACE LOGISTICS SYMPOSIUM (SSLS) will be held at South Shore Harbour Resort & Conference Center, February 22-24, 1995. This symposium is held at approximately 18 month intervals and is sponsored jointly by the American Institute of Aeronautics (AIAA) and the Society of Logistics Engineers (SOLE). The AIAA Houston Section is the lead host organization for the sixth 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 symposium will consist of a series of unclassified plenary and concurrent paper sessions as well as technical workshops, exhibitions and tours of local facilities.


Scheduled keynote speakers include Dr. Carolyn Huntoon, Director, Johnson Space Center; Howard Trudeau, VP Engineering, Lockheed Missiles & Space Division; and Lt. Gen. J. W. Kelley, USAF, Commander, Air University and Director of Education, Air Education and Training Command. 

### **Museum of Fine Arts—Free Admission for Space Employees and AIAA Members**

**James Oberg**  
**Councillor**

THE EXHIBITION "Quest for the Moon and Other Stories: Three Decades of Astronauts in Space" is running through February 5 at the Museum of Fine Arts, 1001 Bissonnet, Houston. Presentation of a space industry badge, or other form of AIAA identification (such as a copy of this memo) at the front desk allows free admission of the employee and


immediate family. For more information, call 639-7300. Many JSC folks have already seen this exhibit and highly recommend it.

The original offer was made to Rockwell employees due to Rockwell's corporate support of the Museum programs. After a discussion with Margaret Skidmore's office at the Museum on January 11, the Museum generously agreed to extend this offer to all space industry workers and specifically to AIAA members as well. 

### **Space Institute Offers Classes**

THE HOUSTON SPACE INSTITUTE (HSI) announced recently that it will begin offering classes. The first classes available from the Institute will cover Space Law, Opportunities in Space Commerce, Astronomy, and Space Science. HSI also made its library available to researchers in all space disciplines.

The centerpiece of the new courses offered at HSI is "Space Law: a Seminar with Dr. Nathan Goldman." Dr. Goldman teaches business law at Rice University and space law at the South Texas College of Law. He has also lectured at the University of Houston. Dr. Goldman is the author of the textbook for the course, Space Policy and Law.

The Space Law course will start on February 28, 1995, and run every Tuesday through April 11, 1995. It will be held at the Holiday Inn on NASA Road One in the Clear Lake area. The course covers issues such as who owns the Moon, who is liable if two satellites collide, how space launches are licensed and regulated, what regulations govern the export of satellites for launch in foreign countries, and other current policy questions. The Space Law course costs \$189, and will be offered in the fall as well. For further information, contact Jim Davidson, President of the HSI, at (713) 698-9971. 

## **Student Paper Competition**

**Tom Mulder**  
**Student Paper Competition Chairman**

THE 43rd AIAA REGION IV Student Paper Competition will be held at the Ramada Inn-College Station on April 6-8. Co-hosts are the AIAA Houston Section and Texas A&M AIAA Student Chapter. Student research papers will be reviewed in both undergraduate and graduate categories, receiving equally-weighted grades for their written papers (evaluated in March) and oral presentations (at College Station).

AIAA members and their co-workers are asked to volunteer as written and/or audio judges for this rewarding event. Other services are certainly welcome, as well. To obtain more information, please contact Tom Mulder of McDonnell Douglas at 244-4428.



## **Huntoon Speaks at December Dinner Meeting**

**George Nield**  
**Chairman**

JOHNSON SPACE CENTER DIRECTOR Carolyn Huntoon was the guest speaker at the Houston Section's December dinner meeting at the Gilruth Center. Having a "Director's Reception" at this time of year has become somewhat of an annual tradition of late, but this year was a little bit different in that the NASA Public Affairs Office specifically invited the local news media to hear the presentation. Drawing on quotes from Machiavelli and others, Dr. Huntoon gave a very eloquent talk on some of the challenges facing our country's space program today, ranging from budget cuts to the changing political environment to what seems to be a general aversion to risks of any kind. For those who may have missed it, the speech is available through the World Wide Web portion of the internet, as part of the AIAA Houston Section pages. The address is:

[http://www.jsc.nasa.gov/AIAA/AIAA\\_Home.html](http://www.jsc.nasa.gov/AIAA/AIAA_Home.html)



## **Operability Workshop Planned**

PLANNING IS CURRENTLY UNDERWAY for a special workshop to be conducted in the Clear Lake area on July 26-27, 1995. The workshop, tentatively titled "Operability: Bridging Commercial, Military, and Space Technologies," is being jointly sponsored by the NASA Johnson Space Center, the AIAA Houston Section, and local industry. We plan to bring together a wide variety of participants from government and industry to discuss ongoing technology, processes, and accomplishments in operability, with the aim of trying to reduce the overall costs of space activities. If you would like additional information on the workshop, or would be interested in helping to plan this special event, please contact Ken Cox at (713) 483-8224.



## **Second NASA Facility Tour Held**

**Michael Begley**  
**Vice-Chairman, Operations**

DUE TO INCLEMENT WEATHER, only five people attended our 18 January lunch and learn tour of the Weightless Environment Training Facility in NASA's building 29. The tour was conducted by Michael Hess of NASA's Extra-vehicular Activities Section. Mike provided an overview of the facility and its history (the building previously housed a centrifuge, which explains its circular shape). We also received a look at the EVA tools and Shuttle mock-ups, and a peak at the control room. During the tour, two STS-69 EVA crew members were practicing flight activities in the pool, including use of the Remote Manipulator System for astronaut translation.



## Cranium Cruncher

Lou Livingston  
Editor

### January Solution

THE YEAR 1961 has the curious property of reading the same upside down. Starting with the year 1 A.D., how many times has this been true, and when will it be true again?

Five digits (0, 1, 6, 8, and 9) look like digits upside down. 0, 1, and 8 ("same" digits) look the same upside down; 6 and 9 ("opposite") switch roles.

For the year to look the same upside down, the following conditions apply:

A single digit year must be a "same," but not 0. There are two of these.

In a two-digit year, the first digit can be either type, but not 0. There are four of these.

In a three-digit year, the outside digits can be either type but not 0; there are four of these. The inner digit must be a "same" (including 0). There are three of these, making a total of twelve three-digit years.

For four-digit years up to the present, the outside digits must be 1. The inner digits may be either type, for a total of five.

The total of these is 23: the years are 1, 8, 11, 69, 88, 96, 101, 111, 181, 609, 619, 689, 808, 818, 888, 906, 916, 986, 1001, 1111, 1691, 1881, and 1961.


The next time won't be for a while yet; it's 6009.

Three correct solutions were submitted: Chris Varner (whose systematic solution is paraphrased above), Ed Strong, and Chris Burmeister. Chris Varner's name came out of the hat, so he wins a free dinner at a Houston Section meeting. Congratulations to Chris, and thanks to all the competitors!

### February Cruncher

A clock hangs on a wall 8' high and 56' 2½" long. While waiting for the waning crescent moon to rise, it was noticed that the hour and minute hands were pointing in opposite directions and were

parallel to one diagonal of the wall. What time was it?

Send your solutions to Michael Begley, LESC/C87, or e-mail to [louliv@aol.com](mailto:louliv@aol.com) by February 21. As usual, a random pick from the correct answers wins a free dinner. 

## 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 at LESC/C87 or to Lou Livingston, 1911 Pepper Hill, Houston, TX 77058, or e-mail to [louliv@aol.com](mailto:louliv@aol.com).

### February

#### Now Through 5 - Sunday

Exhibition, "Quest for the Moon and Other Stories: Three Decades of Astronauts in Space," Museum of Fine Arts, 1001 Bissonnet, Houston. Present a space industry badge or other form of AIAA identification at the front desk for free admission of the employee or member and immediate family.

Information: 639-7300.

#### Now Through May 2

"The Clementine Collection," photos from the recent Clementine mission, on display at Space Center Houston.

Information: Jennifer Casey, 244-2133.

#### 1 - Wednesday

GN&C TC Lunch & Learn.

"Mir RCS Automaneuver Logic," Rob Hall, Draper Labs.

Gilruth Center, room 206, 11:45 AM.

Information: Naz Bedrossian, 333-2127, or Jayant Ramakrishnan, 333-4419.

(see CALENDAR, page 8)

CALENDAR (from page 7)

## February (cont.)

### 9 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

### 13 - Monday

Horizons inputs for March due COB.

### 15 - Wednesday

Education/Career Enhancement Comm.

Internet Seminar: Robert Beal, Draper Labs, &

Clifford Kurtzman, Tenagra Corp.

Center for Advanced Space Studies Lecture Hall,  
6:45-8:30 PM.

Information: Naz Bedrossian, 333-2127, or Jayant  
Ramakrishnan, 333-4419.

### 16 - Thursday

Monthly dinner meeting.

Speaker: Gene Kranz.

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

### 22-24 - Wednesday-Friday

AIAA/Society of Logistics Engineers Joint Space  
Logistics Symposium.

South Shore Harbour Resort & Conference  
Center.

## March

### 9 - Thursday

AIAA Workshop on Automation and Robotics  
1995 (WAR '95).

"Intelligent Robots."

Gilruth Center, 8:00 AM-1:30 PM

Information: Dr. Zafar Taqvi, 244-8662.

### 16 - Thursday

Executive Council meeting.

Center for Advanced Space Studies, 5:00 PM.

### 23 - Thursday

Monthly dinner meeting.

Program TBD.

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

### 27 - Monday

Horizons inputs for April due COB.

JSC Navigation, Control and Aeronautics Div.  
Presentations & demos: The Mathworks; Sim-  
ulink, Realtime Workshop, Toolboxes.

Center for Adv. Space Studies Lecture Hall, 9:00-  
4:00.

Information: John Sunkel, 483-8591, or Naz  
Bedrossian, 333-2127.

## April

### 3-6 - Monday-Thursday

Life Sciences & Space Medicine Conference &  
Exhibition '95.

Westin Galleria.

Registration: (202) 646-7464.

Information: (800) 615-0198.

### 6-8 - Thursday-Saturday

AIAA SW Region Student Paper Conference.  
College Station Ramada Inn.

Information: Tom Mulder, 244-4428.

### 17 - Monday

Horizons inputs for May due COB.

### 20 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

### 27 - Thursday

Monthly dinner meeting.

Program TBD.

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

## May

### 11 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

### 18 - Thursday

Monthly dinner meeting.

Program TBD.

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



CALENDAR (from page 8)

**May (cont.)****19 - Friday**

Annual Technical Symposium.  
"International Space Station."

**22 - Monday**

Horizons inputs for June due COB.

**June****15 - Thursday**

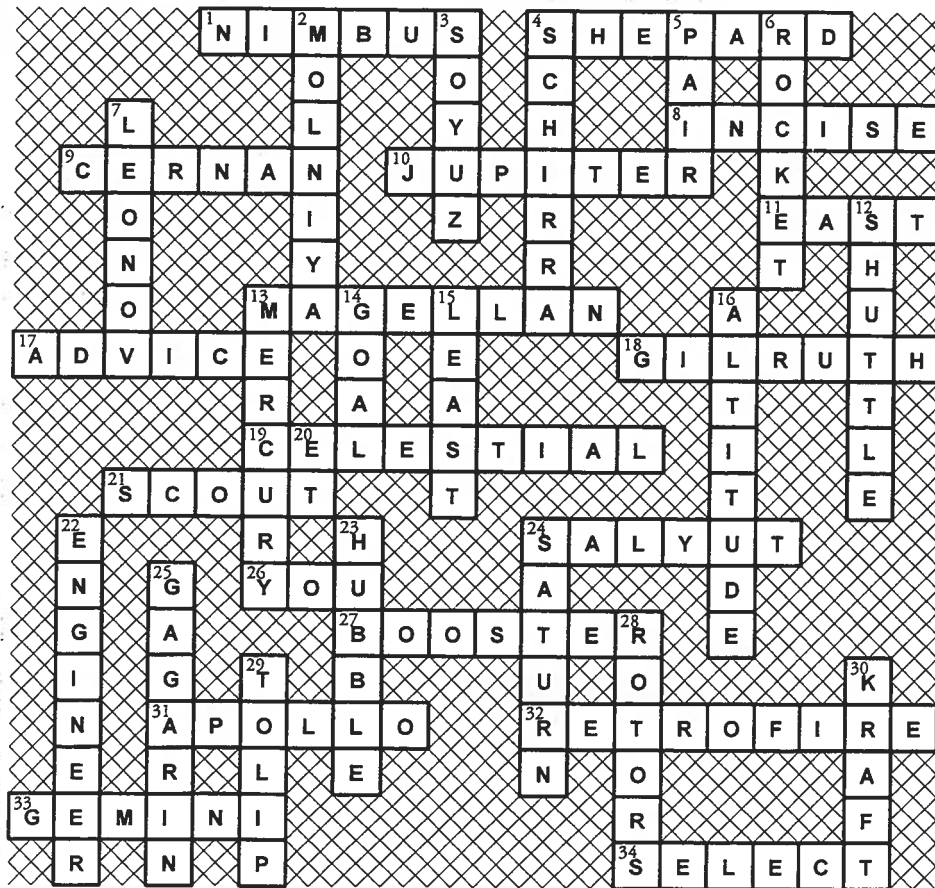
Executive Council meeting.  
5:00 PM, Center for Advanced Space Studies.

**22 - Thursday**

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



## Puzzle Solution

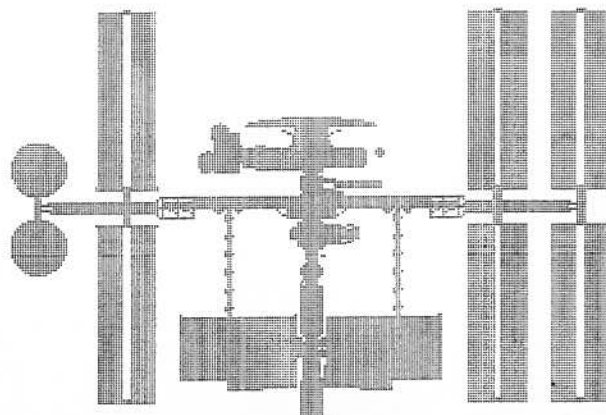
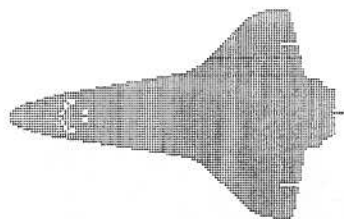
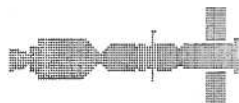
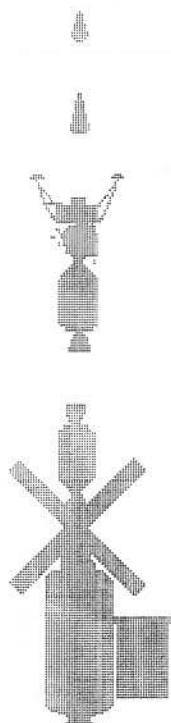




# Horizons

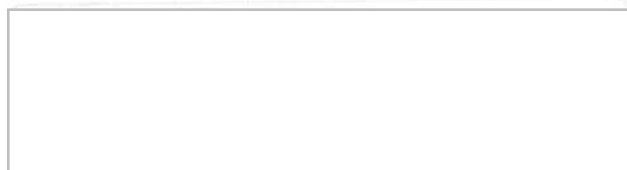
The mission of the Houston Section of the AIAA is to promote the advancement of the aerospace profession, with special emphasis on the following tasks:

- 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.
- To provide support and encouragement for students in learning mathematics, science, and engineering.
- To assist the general public in understanding the benefits of aerospace systems and technology.



**AIAA Houston Section**  
**P. O. Box 57524**  
**Webster, TX 77598**

**Non-Profit Organization**  
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**Webster, Texas**





GEORGE NIELD  
CHAIRMAN 1994-95

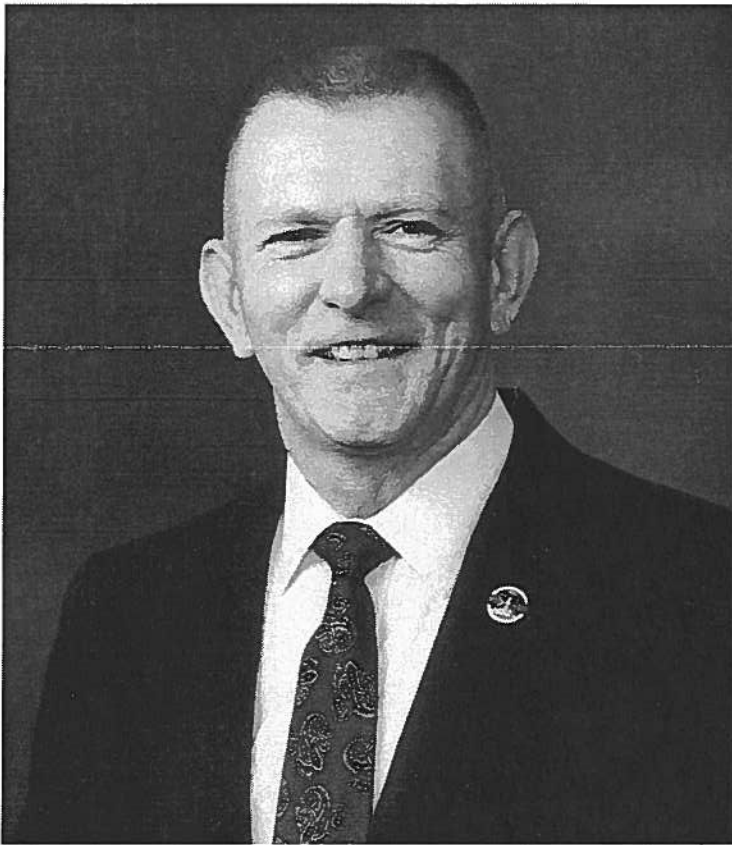
## American Institute of Aeronautics and Astronautics

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

**Thursday, February 16, 1995**

### 35 YEARS OF MANNED SPACEFLIGHT

**EUGENE F. KRANZ**  
Aerospace Consultant,  
Writer, Speaker



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

### PRESENTER

Following graduation from Parks College in 1954, Mr. Kranz was commissioned in the U.S. Air Force and flew high performance jet fighter aircraft. In 1958 he worked as a Flight Test Engineer for McDonnell Aircraft. Mr. Kranz joined the NASA Space Task Group at Langley in 1960 and was assigned as the Assistant Flight Director for Project Mercury. He assumed Flight Director duties for all Project Gemini Missions and was Branch Chief for Flight Control Operations. Gene was selected as Division Chief for Flight Control in 1968 and continued his duties as a Flight Director for the Apollo Program. He performed as both a Flight Director and Flight Operations Director for the Skylab Program, and, at its conclusion, was assigned as Deputy Director of Flight Operation. In 1983 Mr. Kranz was assigned as Director of Mission Operations. He retired from NASA in March 1994 after 37 years of federal service. Current activities include consulting, motivational speaking to youth groups, and lecturing on manned spaceflight. He is a Flight Engineer on the B-17 "Thunderbird" and performs at Airshows throughout the U.S., and is building an aerobatic biplane. Mr. Kranz was co-recipient of the Presidential Medal of Freedom awarded by President Nixon for the Apollo 13 Mission, and was designated a Distinguished member of the Senior Executive service by President Reagan.

### DINNER MEETING

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

### MENU: CHICKEN IMPERIAL

<b>MEMBERS &amp; SPOUSES</b>	<b>\$ 10.00</b>
<b>NONMEMBERS</b>	<b>\$ 11.00</b>
<b>STUDENTS/YOUNG MEMBERS</b>	<b>\$ 5.00</b>
<b>UNEMPLOYED MEMBERS</b>	<b>\$ 5.00</b>

**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, FEBRUARY 13th, 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.**



**American Institute of Aeronautics and Astronautics**

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

## **AIAA Guidance, Navigation & Control Committee**

Presents a

### **Lunch & Learn Seminar**

#### **Description of the Mir RCS Automaneuver Logic**

**Rob Hall**

**The Charles Stark Draper Laboratory**

With recent joint efforts between the Americans and the Russians in the Space Shuttle and Space Station programs, information has been received concerning the nature of the control system algorithms utilized on the Russian Mir space station. An item of particular interest is the manner in which the Mir accomplishes rotational maneuvers on-orbit with its Reaction Control System (RCS) thrusters. It is necessary to understand the maneuver algorithm in order to predict Mir angular excursions in the presence of orbiter plume disturbances during orbiter/Mir separation.

A presentation is given describing the Mir RCS rotational maneuver algorithm. Unlike the Euler axis rotation utilized on the orbiter, the Mir algorithm is a fuel optimal trajectory based on the assumption of an axisymmetric body. The Mir maneuver trajectory is shown both graphically and mathematically, with a discussion also included concerning an approximate solution to the Russian non-linear maneuver equations.

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**DATE: Wednesday, February 1, 1995**

**PLACE: Gilruth Center (Room 206)**

**TIME: 11:45 A.M.**

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**For More Information, Please Contact**

**Dr. Naz Bedrossian 333-2127**

**Dr. Jayant Ramakrishnan 333-4419**



**American Institute of Aeronautics and Astronautics**  
HOUSTON SECTION P.O. BOX 57524 WEBSTER, TEXAS 77598

**AIAA Education & Career Enhancement Committee**

**is proud to present**

**A two part Seminar on INTERNET**

**(i) How the Internet Works & the Tools used to Navigate it**

**by**

**Robert D. Beal, Draper Labs**

**(ii) DOING BUSINESS ON THE INTERNET**

**by**

**Dr. Clifford R. Kurtzman  
President and CEO  
The Tenagra Corporation**

**on Wednesday, February 15  
at the LPI Lecture Hall at 6:45 P.M.**

**For More Information, Please Call**

**Dr. Jayant Ramakrishnan, 333-4419  
Dr. Naz Bedrossian, 333-2127**



**American Institute of Aeronautics and Astronautics**  
HOUSTON SECTION P.O. BOX 57524 WEBSTER, TEXAS 77598

**AIAA Guidance, Navigation & Control Committee  
and  
NASA JSC Navigation Control & Aeronautics Division**

are proud to present

**MATLAB Real Time Workshop & Selected Toolboxes  
Seminar**

**(1 Day Presentation and Demos)**

**by**

**The Mathworks Inc.**

**on**

**Thursday, March 30, 1995 at LPI Lecture Hall**

**9:00 A.M - 4:00 P.M.**

**All are Invited!!!**

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**For more Information, please call**

**Dr. John Sunkel 483-8591  
Dr. Naz Bedrossian 333-2127**



## Houston Section Officers 1994-1995

Rev. 1/19/95

<u>Name</u> <u>Phone</u>	<u>Address</u> <u>Fax</u>	<u>E-Mail</u>
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George Nield 483-1364	JSC/MT2 483-6400	gnield@jscprofs.nasa.gov
<b>Chairman-Elect</b>		
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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.



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