AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS HOUSTON SECTION NEWSLETTER

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The Houston Section Newsletter is published periodically by the Houston Section AIAA; This issue printed by Lockheed. Address all communications to Carolyn Conley, Associate Editor on Site, NASA/JSC, Mail Code CH4, or to Robert Glowczwski, Associate Editor, Martin Marietta, Mail Code MMC, 1740 NASA Road 1, Suite 100, Houston, Texas 77058.

W.A. Stewart, Editor

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O LIFT OFF.....

We are now embarking on a new year for the AIAA Houston Section. With the quality of experience and leadership of the executive council and the dedication and enthusiasm of the members, the year will be both rewarding and enjoyable.

I, as your chairman, feel a great responsibility to carry on the high standards of quality the Houston Section has known, and to guide the section as the technical challenges are never ceasing.

In the coming year I hope to focus the section activities on the technical achievements and potential of its members, and on a broad based professional exchange of ideas. I hope that the section will provide a sturdy base for its members and a testing ground for new ideas.

As the Shuttle program is entering its "operational phase" on STS-5 in November, the Houston Section can enter a "Technical Operations Phase". A phase devoted to the pursuit of knowledge, communications, and through these, the enjoyment of satisfaction in a job well done.

Sharon Barnes Castle, Chairman AIAA - Houston Section

O 1983 MINI SYMPOSIUM: Call for Papers Issued

A call for papers to be presented at the 8th Annual Technical Mini Symposium Houston Section AIAA has been issued.

The symposium date is 28 April 1983; the location is the Gilruth Recreation Center/JSC. The deadline for abstracts is 1 March 1983.

The theme of the minisymposium is "Space Operations Systems".

Limit abstracts to 250 words or less. Submit to Robert E. Lewis, AIAA Houston Vice Chairman, Technical (EH 13 Johnson Space Center - Houston, Texas 77058).

For additional information continue reading and/or call R. Lewis at 483-3566.

O MINI SYMPOSIUM: Candidate Topics

The theme of the April 28, 1983, Mini Symposius is "Space Operations Systems".

This encompasses the entire range of potential components of such a system... the shuttle and its derivatives: space stations, orbital transfer vehicles, life support sciences, satellites at geosynchronous orbits, payloads, space materials, processing, space operations, communications systems, etc.

O MINI SYMPOSIUM: Candidate Topics (continued)

These could include some of the potential topics for discussion at the mini symposium. Others suggested at this time are: software engineering for future space systems, software system evolution for shuttle operations, recent advances in software techniques, rendezvous and docking systems, life support for long duration flights, flight control, guidance, navigation, for on orbit operations --- space traffic ground control, multi vehicle flight planning management, flight utilization of robotics, thermal protection systems for orbital transfer vehicles, space module docking, cargo integration, commercial applications of space systems, space station subsystems, shuttle cost reductions, etc.

There is no restriction on technical discipline.

O SEPTEMBER 9 AIAA MEETING: General Hartinger Speaks

The dinner meeting of the Houston Section of AIAA held on 9 September heard the newly appointed Commander of the USAF Space Command, General James V. Hartinger.

General Hartinger indicated the makeup of the Command, stated its organization, and reported on the operational activity undertaken. The Command became effective 1 September 1982. Vice Commander is Lt General Richard Henry, Space Division Commander. Both General Hartinger and Lt General Henry will retain previous responsibilities. General Hartinger is Commander of NORAD.

The activities of NORAD were mentioned and it was shown how the operations led into the formation of the new organization. NORAD is providing important protection in its present role. It is experiencing increased visibility due to recent events on duty all the time providing for the air defense of the country. Other activities operate once a week, for instance.

In only 20 years, the Soviets have come from a very poor second place to a position that number-wise is quite superior to that of the United States. This country has retained a position equivalent to that of twenty years ago. The Soviets are serious in their efforts. They are in space to stay; they are active in all phases of endeavor. For instance, they have an anit-satellite system.

The USAF Space Command has a Theatre of Operations; it is an ongoing study. Efficient space management will be stressed. Space programs will be designed to strengthen space activity. Presently there are around 4700 space objects. Space hardware is tracked and surveillance maintained; location and orbits are made available to determine time, etc., of launch.

An anit-satellite system is to be developed; a satellite interceptor squadron is to be formed and implemented. Presently active is a space combat information center. A space wing will be formed. Experienced knowledge is available...there are 3000 contractors. There will be a place for space rescue operations, and the development of space medicine.

O CLEAR LAKE COUNCIL OF TECHNICAL SOCIETIES

The CLCTS now has eight Member Organizations comprised of local technical socities.

The Member Organizations and their representatives are:

- -Association for Computing Machinery Clear Lake Chapter (John Moore, Moore Engineering Co.)
- -AIAA-Houston Section (Ernie Hillje, NASA-JSC-ET3)
- -Institute of Electrical and Electronics Engineers, Inc. Galveston Bay Section (Andy Lindberg, LEMSCO)
- -Instrument Society of America Clear Lake/Galveston Section (Zafir Taqvi, LEMSCO)
- -Lunar & Planetary Institute (Ron Weber, LIP)
- -L5 Society Houston (Hu Daugherty, Rice University)
- -National Association of Rocketry NASA/HOUSTON Section (Frank Bittinger, Hamilton Standard)
- -Texas Society of Professional Engineers Bayou Chapter (Quin Shepperd, II, MDTSCO)

A current project that is a continuing effort is a monthly calendar of local events; society business meetings, programs, conferences, special events, etc. Any member or non-member group that would like to have events shown on this calendar should call Andy Lindberg at 483-3549 or Ernie Hillje at 483-3405.

The CLCTS was a heavy supporter of the Spaceweek '82 - Houston activities in the July 16-24 time period. Members of the CLCTS sponsored seven events, gave major support in 12 areas, and gave miscellaneous assistance (such as selling promotional items) in 4 areas. In addition, essentially all of the funding came from the CLCTS organizations.

Anyone interested in knowing more about the CLCTS can call anyone of the officers listed below.

1982-83 Officers of CLCTS Announced

Chairman	Quin D. Shepperd II (TSPE)	488-5660
Vice Chairman	Andy Lindberg (IEEE)	483-3549
Secretary	Ernest Hillje (AIAA)	483-3405
Treasurer	Joan Hindman (ACM)	483-2544

O UNISPACE 82: By Carolynn L. Conley, Associate Editor

The second United Nations Conference on the Explorations and Peaceful Uses of Outer Space (UNISPACE 82) met in Vienna, Austria August 9-21. Representatives from over 94 developed and developing countries attended. The three broad goals of the conference were: 1) to assess the present and future state of space science and technology; 2) to consider the applications of space technology for economic and social development; and 3) to evaluate international cooperation, especially that which would benefit the developing countries, and the role of the United Nations.

Preparatory work for the Conference, including the draft report, was begun in 1979 by the Committee on the Peaceful Uses of Outer Space (COPUOS), a 53-nation body established in 1959 as the focal point of UN activities related to space. It was on the recommendation of this committee, especially the developing countries that the Conference was first called for by the General Assembly in 1978.

COPUOS promoted awareness of the Conference through regional seminars held during the past 18 months in Ethiopia, Argentina, France, Indonesia and Ecuador. In addition, UNISPACE 82 Forum, a three-day scientific and technical forum, was held in Vienna immediately prior to the Conference.

The results of the Conference will appear in a report containing observations, conclusions and recommendations. This will be submitted to the General Assembly this fall. The report will be approximately 132 pages containing 430 paragraphs divided into three sections and two appendices.

Three committees discussed these sections until consensus was reached on the wording.

- Committee I reviewed major developments in space science and projected the future for space research.
- Committee II evaluated current and potential applications of space technology in national and international programs, focusing on remote sensing and satellite communications. It examined mechanisms for enabling all states to benefit from space technology, bearing in mind their different levels of development, varying capacities to absorb new technologies, and special needs and priorities. It also examined use of space technology for education. It discussed compatibility and complementarity among various satellite systems, including those used for remote sensing and meteorology. It took up the implications of using the geostationary orbit. Finally, it discussed the near-Earth environment and ways of protecting it.
- Committee III considered reports on the nature and extent of bilateral and multilateral cooperation in outer space; evaluation of UN activities, including its role in insuring that space technology benefits all countries, and other international organizations dealing with outer space; and evaluation of the role of all participants in the space program to insure broad international cooperation.

In addition to the official meetings, a UNISPACE 82 Exhibition was held at the Wiener Messepalast, Vienna, Austria, from August 9 to 21, 1982. Each day over 10,000 people from Austria and vacationers from around the world viewed the exhibits.

O UNISPACE 82: Continued

More than 20 countries mounted exhibits, including the US, Japan, West Germany, France, Canada, India, the USSR, and ESA.

The US exhibit demonstrated that US leadership in space is the consequence of both government and private sector contributions. Its theme was "Working Together to Benefit Spaceship Earth."

The U.S. exhibit was a combined effort by government agencies, private companies and universities. The companies participating include: Ford Aerospace and Communications; General Dynamics; Grumman; IBM Federal Systems Division; International Imaging Systems; Lockheed; Martin Marietta; McDonnell Douglas; RCA Government Systems Division; Rockwell International; Townsend Associates; and, the American Institute of Aeronautics and Astronautics.

The exhibit featured projects to develop electricity from sunlight; the U.S. space transportation system, including the world's first reusable spacecraft, the Space Shuttle; and several remote sensing projects.

There was a moon rock that guests were invited to touch; a full-scale model of the U.S. spacecraft that landed on Mars; a large model of the Space Shuttle; a large model of the Landsat D spacecraft; and many other models of spacecraft.

Visitors had the opportunity to walk through the "planet room" where photographs of planets were projected, and visit the Columbia Theatre, where a continuous space shuttle film was shown.

Jack Heberlig and J. Merrell represented IBM at the Exhibit. Chuck Biggs, NASA, JSC, was responsible for the exhibit. Everett Shafer provided Astronaut Security.

On Tuesday evening, August 10, the U.S. presented a "Gala" Evening at UNISPACE 82 in the Volkstheater in Vienna. Master of Ceremonies for the event was award-winning author, James Michener, who spoke on "The Impact of Space of Mankind." Astronaut Colonel Henry Hartsfield provided a live, spontaneous narration to the official film of his STS-4 mission. Astronauts Dr. Anna Fisher and Dr. William Fisher delivered a joint presentation on "The Challenge of the Future to Work in Space."

A typed presentation from President Reagan was shown:
"From the very beginning of the United States' space program, we have emphasized international cooperation. I am extremely proud that most of our major space projects have been carried out with the participation of other nations. Indeed, international cooperation is woven into the basic fabric and structure of our civil space program.

This second United Nations Conference on the Peaceful Uses of Outer Space provides leaders from around the globe with an unprecedented opportunity to chart a course for greater cooperation among nations in exploring mankind's last and endless frontier."

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(This report will be continued in the next issue of the Newsletter).

O FOURTH ANNUAL CONFERENCE ON COMPUTER DEVELOPMENTS

The Forth Annual Conference on Computer Developments, sponsored by UH/CLC, will be held at the UH/CLC Campus on 5 November 1982.

The purpose of the conference will be to gather together members of the local industrial, commercial, and academic community in order to share information on recent developments in computer hardware and software and their applications. Research and tutorial papers are requested on, but not limited to, the topics listed below.

Data Base Design
Computer Networks
Office Automation
Computer Standards
Computer Architecture
Real Time Applications

Computers and the Aerospace Industry Techniques for Software Management Advance Language Development Computer Science Education Distributed Processing

Estimation and/or Evaluation of Software Systems

Supported by Galveston Bay and Clear Lake Sections of the IEEE and ACM

O LUNAR AND PLANETRAY INSTITUTE TO SPONSOR CONFERENCE

A conference on "Chondrules and Their Origins" to be held at the institute is set for 15-18 November 1982. Among topics to be discussed are the textures and mineral chemistries; isotropic measurements and chronology; and theoretical and experimental studies of chrondrule formation. Additional information on the conference may be obtained from Pam Jones, Conference Administrator, LPI, 3303 NASA Road 1, Houston, Texas 77058 (486-2150).

O AWARDS FOR HOUSTON SECTION ALAA MEMBERS

Angelo Miele is the recipient of the 1982 Mechanics and Control of Flight Award. The citation is for "fundamental contribution to the mechanics and control of flight of aircraft, missiles, satellites, and spaceships, and in particular - for the development of innovative techniques for the analysis and computation of flight trajectories".

John W. Young of the Houston Section (AIAA Fellow) and Robert L. Crippen (AIAA Member) have been selected as recipients of the 1982 Haley Space Flight Award.

E.W. Smythe of IBM and Michael L. Coats, NASA, have been made Associate Fellows.

O FOOTBALL

How about a Football Trip to Texas A&M vs Rice? A bus trip to the Texas A&M/Rice football game on 23 October 1982 has been arranged. All that is needed is \$30.00 in hand to reserve a spot at the game.

O FOOTBALL (continued)

What do you get for \$30.00? Well, first you get the convenience and luxury of not driving the approximately 250 miles yourself. Just sit back and take it easy (for a standard sedan that converts to approximately \$19.00 for gas alone).

Next you will receive a gourmet lunch on the bus with appropriate adult beverages and soft drinks. There is the excitement of the A&M/Rice clash with the famous Texas A&M Band and the Marching Owl Band (better known as the "MOB") at halftime. After all this will come an early evening dinner and a short student program.

The bus ride back will be relaxing after this full day of activities. So if this appeals to you then do contact Ernie Hillje (483-3405) or Norm Chaffee (483-3995). We will need early commitments to make this effort worthwhile. Do plan to join us. We are planning on a group of 39 ... so don't wait until the last minute. Please see the centerfold.

O ACTIVITIES CALENDAR

September activities for CLCTS

- 21 September
- o Association for Computing Machinery
 Program Dr. Rod Brown UH/CLC (488-9284)
 12:00 Noon at UH/Clear Lake City Forest Room (Cafeteria available)
- 22 September
- o Clear Lake Council of Technical Societies
 Executive Board Meeting
 11:30 AM Holiday Inn Restaurant (NASA Rd. 1) (Info: Ernie Hillje 483-3405)

October activities

7-8 October

o RAC Meeting in the Rio Grande Valley. Prime input will be nominations for the post of Regional Director of Region IV (to begin June 1983)

25-27 October

o AAS Meeting - Theme: "Developing the Space Frontier"

COMMITTEES

O STUDENT AFFAIRS COMMITTEE PLANS ACTIVE YEAR

The Student Activities Committee has been active during the summer supporting the "Space Science Adventure" (see accompanying article) and Spaceweek--with an exhibit in the visitors center at JSC.

Plans are being formulated to support our four Student chapters: Texas A&M, Prairie View A&M, Rice University and our newest chapter - Lamar University. Support will be in the form of providing speakers, counseling, tours, special programs, etc.

In addition, the Getaway Special (GAS) programs, at the schools that have them, will be reviewed and offered advice on how to proceed now that the Space Shuttle flights are operational.

The Science Fair Activity will be expanded to include several awards at each of the three current exhibit levels with some special awards (most creative, most practical, etc.) being given if the quality/quantity of the exhibits warrants it.

If all this activity is to be successful, we need help in the form of "warm bodies". If any one relates to working with students (and who doesn't?), please contact Ernie Hillje at 483-3405. Working with these young people will be stimulating and personally rewarding.

O SPACE SCIENCE ADVENTURE

Members of the Student Affairs Committee participated in an interesting event in support of the local Spaceweek celebration. Ernie Hillje (NASA-JSC-ET3) and Bob Herman (Hamilton-Standard) played the role of "aircraft purchasing agents" for an event that climaxed a two-week session for gifted and talented students-a "fly-off competition"--at the Texas A&M Mitchell Campus. Six student/aircraft manufacturer teams each designed and built an aircraft to fly an egg safely fifty feet across a designated area.

The afternoon started with a presentation by Dick Scobee, NASA astronaut, who gave the 90-plus students (ages 11 through 16) an overview of the Space Shuttle program. The question and answer period following generated such questions as: why doesn't NASA sell tickets for the Shuttle flights, how were the names for the orbiters chosen and why is there no bar in the "A" in "NASA?

The fly-off was conducted in a nearby field where each team got three tries to launch their vehicles and meet the distance/safety criteria. Consideration was given to the aerodynamic features, cost effectiveness, effort, practicality of design, and originality. Competing were manufacturing companies such as "Sunny Side Up, Inc." and Fly-By-Night," pilots with names like Sammy Scrambler and Rodney Eggerfield, and craft such as "50 ft or Bust" and "Chicken Little." After the test flights came a briefing by the student teams who explained their design philosophies, cost basis, etc. Then the "contracts to purchase" were made for the design that best suited the airlines needs. It was an interesting afternoon indeed, hosted by June Scobee who is the Director of the Space Science Adventure.

O AIAA 1982-83 TECHNICAL COMMITTEE CHAIRMEN (HOUSTON SECTION):

Software Systems

Wayne Musial MDTSCO X262

Computer Systems

Frank Whiting MDTSCO X222

Communications Systems

Dr. Phil Hopkins Lockheed 483-4119

Energy Systems

Dick West MDTSCO X244

Ground Test and Simulation

John Grimaud NASA X3481

Mechanics and Control of Flight

Rosco Lee

TRW 333-3133 X243

Materials, Structures & Dynamics

Tom Moser NASA X5193

Space Systems

Logan Haycraft Boeing 486-1280

Persons interested in joining one of these committees are requested to contact the respective chairman directly.

O CHARTER COMPUTER SYSTEMS MEETING

Attention.....AIAA Computer People.....We are forming a local Computer Systems TC with a charter and officers as follows:

Mutually support activities leading to advancement of the state of the are in technical area of aerospace computer systems. Learn, teach and exchange information pertinent to aerospace computer systems. Review, evaluate and recommend productive improvements to current and planned projects and policies in the area of aerospace computer systems. Provide a forum for the exchange and publication of new ideas. Support individual career progression and self-improvement for persons in the field of aerospace computer systems. Exchange information and work cooperatively with other, related technical groups and committees toward advancement of the state of the are in aerospace computer science and applications. Support National AIAA computer Systems TC activities

Officers to be chosen include:

Chairman Vice Chairman Secretary - Publications Technical Program Coordinator

A monthly luncheon meeting will be held. The Technical Program Coordinator will invite guest speakers or arrange technical discussion panels one month in advance on topics of interest. The Secretary-Publications will prepare a brief summary of presentations and activities for publication in the Houston Section Newsletter. A typical luncheon would include: 20 minutes for lunch, 10 minutes for business and 30 minutes for presentation/discussion.

All interested parties, please call Frank Whiting at $488-5660 \times 222$ with your name, phone number and mailing address. As soon as ten or more are gathered together, we will announce our first meeting.

O GROUND TEST AND SIMULATION TC:

A meeting of the Ground Test and Simulation Technical Committee will be held on Wednesday, October 6, 1982, at 12 noon in Bldg. 13, Room 147. At this meeting ideas, format and location of future committee activities will be discussed.

Membership in the Technical Committee is not a requirement for attendance and all people interested in the objectives of the Technical Committee are urged to attend. For information call John E. Grimaud X3481.

O SOFTWARE SYSTEMS TC:

The first meeting in the Houston Chapter of a Software Systems TC is being planned for mid-October. This will be an organizational meeting during which the charter and format of this TC will be discussed. All those interested in software systems development, software engineering techniques and methodology are invited to participate. Additional details will be provided at a later date. For more information call Wayne Musial at 488-5660, X262.

O SPACE SYSTEMS TECHNICAL COMMITTEE MEETING

All members interestered in participating in activities of the Houston Section Space Systems TC are invited to a meeting at 3:30 PM, 1 October, in the first floor conference room at the Boeing Building, corner of Bay Area Blvd. and Saturn Lane.

Joe Loftus of JSC who is a member of the AIAA Space Systems TC will fill us in on current national TC projects and activities.

We will make plans for future Houston Section Space Systems TC activities.

If you have ideas for projects or activities we should be involved in, join us and share your suggestions.

Login Haycraft Chairman Space Systems TC

O SEPTEMBER CRANIUM CRUNCHER

All right ladies and gentlemen. Let's get this year's activity underway. I plan to present you with a set of titillating, tantalizing, terrific puzzlers this year which will stretch your capabilities to the limit.

In order to eliminate problems caused by inconsistencies in mail service I plan to establish a cutoff date for submitting answers to each month's puzzle. After the cutoff date I'll take all of the correct responses, pitch them in a basket and pull out one winner. Of course I'll acknowledge all correct answers in the next Newsletter. As we did last year, each month's winner will receive a free dinner at a meeting of his choice.

A little old business....the winner of the free dinner for solving June's Cranium Cruncher is David Mercier from Singer-Link. The June puzzle was a toughie. Dave was the only correct respondent (the problem was to find the equation of the locus of the center of gravity of a square timber rocking back and forth on a log without slipping.) The equation is a catenary, $y = 4 \left[1 - \cosh\left(\frac{x}{4}\right)\right] \bullet$

Congratulations to Dave.

And now for September's puzzle. "My house is on a road where the house numbers run 1, 2, 3, 4, consecutively. By a curious coincidence, the sum of all house numbers less than mine is the same as the sum of all house numbers greater than mine. What is my number and how many houses are there on my road if my house number is in the thirties?"

Send your answers to Norman Chaffee, mail code EP, NASA/JSC, Houston, Texas 77058.

1982-83 AIAA HOUSTON SECTION

Officers		
Chairman Sharon G.(Barnes) Castle	NASA/CH6	483-2583
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Vice Chairman, Technical Robert E. Lewis	NASA/EH13	483-3566
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Staff		
Staff Joseph S. Algranti - RAC IV Rep. Dr. E.A. Kiessling - ECH Rep. U of H Ernest R. Hillje - CLCTC Rep. Dr. Edward C. Ezell - Historian Robert V. Glowczwski - Region IV, Deputy for Membership	NASA/CC 15402 Wandering Trail Friendswd. NASA/ET-3 77546 NASA/BE4 Martin Marietta/MMC	483-7226 749-1721 483-3404 483-2838 333-4150
Committee Chairman	10	· -
Phillip M. Deans - Membership Committee William A. Stewart - Newsletter Richard J. Crane - Publicity Bob Cohen - Public Affairs/Speaker Group Thomas B. Murtagh - PA/Tour Group Richard Gertsch - Public Affairs	NASA/EK3 Box 57913 Webster 77598 1111 Oak Circle Seabrook 77586 NASA/WT3 NASA/FD4 Box 6504 Houston 77005	483-6486 476-1630 333-2465 483-6161 483-3217 627-8124

Magcobar Minerals

1982-1983 AIAA HOUSTON SECTION

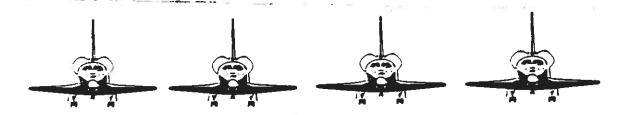
Program Dates, Topics, Speakers

October 14	OSTA-1 STS-2 Flight Results	Richard Baldwin, JSC Spacelab Mission Management Office
	OSTA-3 STS-17 Plans and SIR-A Flight Results	Dr. JoRea Cimino, Member of Technical Staff JPL
November 18	Progress Towards Excellence - Development at the Patent and Trademark Office	Gerald J. Mossinghoff Commissioner of Patents and Trademarks United States Department of Commerce
April 28	National Space Issues	Dr. Michael I. Yarymovych AIAA President Vice President - Advanced Systems Development Aircraft Group Rockwell International



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AIAA HOUSTON SECTION 1982-1983 DINNER MEETINGS **HELD AT JOHNSON SPACE CENTER** ROBERT R. GILRUTH RECREATION CENTER

6:00 Social: Dinner: 7:00 Program: 8:00

THURSDAY - OCT. 14,1982



AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

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

OSTA-1 FLIGHT RESULTS

RICHARD R. BALDWIN SPACELAB MISSION SUPPORT OFFICE JOHNSON SPACE CENTER "OSTA -1 STS-2 SUMMARY OSTA-3 STS-17 PLANS"

DR. JoBEA CIMINO MEMBER OF TECHNICAL STAFF JET PROPULSION LABORATORY "SHUTTLE IMAGING RADAR FLIGHT RESULTS"

Flight summary results of the successful OSTA-1 payload flown during the second Orbital Flight Test STS-2 is reviewed with detailed explanation of SIR-A flight results. Experiment planning for the OSTA-3 payload now assigned to STS-17 is commented upon. The program continues the reporting of STS Flight Results.

SYLVIA

FOR DINNER RESERVATIONS, CALL:

DIANNE 333-4150 (Martin

Marietta)

JOANNE 333-2030 EXT. 242

(Rockwell)

488-5660 EXT.211 (MDTSCO)

PATTY

NANCY (NASA)

483-3995 845-7541 (College Station) **ENTREE - BAKED HAM** WITH PINEAPPLE

\$8.50 **MEMBERS & SPOUSES** NON-MEMBERS STUDENT DISCOUNT

\$7.50 \$2.00

RESERVATIONS DEADLINE IS TUESDAY - OCT. 12 at 12:00 NOON

DINNER CANCELLATIONS ARE REQUIRED

ALL ARE WELCOME

THERE IS NO CHARGE FOR ATTENDING THE PROGRAM ONLY

DOOR PRIZES

American Institute of Aeronautics and Astronautics Houston Section

Presents

Texas A&M · Rice Football

- Saturday October 23, 1982
- Chartered bus leaves from behind Holiday Inn/NASA 1 at 10:00 AM (Be there at 9:30 AM)
- Gourmet lunch on bus, beer, wine, and soft drinks
- Attend Aggie Owl football game (2:00 PM kickoff)
- Dinner after game on campus
- Student program on current projects
- Return by bus to Holiday Inn
- 39 seats available we need a minimum of 30 reservations
- Cutoff date for reservations/payment is October 8, 1982
- Cost is \$30.00 per person which includes the bus, 2 meals and the game
- Package deal only no variations
- Money is needed early

Contacts: Norm Chaffee 483-3995 Ernie Hillje 483-3405