

## JSF Dinner Meeting and Fly-In at the LSFM



Paul Metz from Lockheed Martin on Oct 7<sup>th</sup> at the Lone Star Flight Museum Galveston. See Page 4.

# Horizons

November 2003

AIAA Houston Section



ONLINE



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by

**November 20**

Attention: Michael Oelke  
[AIAAchair@aiaa-houston.org](mailto:AIAAchair@aiaa-houston.org)  
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## Chair's Corner

The AIAA calendar year is rapidly progressing - we're already 1/3 of the way through it and off to great start. We had some additional wind added to our sails this past month when we received news from AIAA national that we won the Outstanding Section award in the Very Large Section category. And it gets better. Not only did we win first place in Outstanding Section, but in all six other categories as well (communications, membership, pre-college outreach, career enhancement, public policy, and young professional activities). This is an exceptional accomplishment because we are competing against the ten largest Sections in the US, some of them nearly 50% larger than ours. Kudos to our past Chair, Nicole Smith, and all the other officers from last year who made this possible.

Although that's a quite a reputation to live up to, your Houston Section officers this year are providing excellent service and I have no doubt that we will be a strong competitor for those awards next year as well.

As we move into the mid-phase of this year we are already planning on building our staff and events for next year. In particular, we are working on improvements to *Horizons*, our website, and technical symposia. Those involved are enjoying the opportunity to pick up new skills and interact with some of the award winners from last year. Please review the org chart in the back of this issue and contact us if you find any of the officer positions interesting.

We hope to see you at one of our upcoming events!

*Michael L. Oelke*  
2003-04 Chairperson, AIAA Houston Section

## The Conquest of Mars on Earth

*By Michael Oelke, Chairperson*

Over sixty people enjoyed a fascinating presentation on the Mars Desert Research Station (MDRS), held at the Gilruth Center on Thursday October 23rd. Fathi Kouria from the University of Houston recounted his experiences as a member of the first expeditionary group to use this simulated Mars base laboratory situated in Utah. The MDRS is one of several Mars simulated research stations funded by the Mars Society and its sister organization in other countries. The primary purpose of the MDRS is to allow scientists and engineers to develop techniques for Mars research. Its function is similar to how practicing EVA techniques in the KC-135 or in the NBL can help reveal important hardware or procedural changes that can help improve actual missions.



*The Mars Desert Research Station in Utah.*

The crew lived at the MDRS for one month in February of 2002. Among the items evaluated were: different types of spacesuit configurations, three different types of rovers (which included simulated airlocks and laboratories), and EVA timelines. Support personnel filmed and timed the crew as they performed exploration and research activities in order to assist with timeline planning for future missions.

If you would like to learn more about the MDRS or the other simulated Mars research stations, contact the Mars Society. The local Houston section can be reached at:

<http://marshouston.org/marsindex.html>

Information on the Mars Analog Research Stations can be found at:

<http://www.marssociety.org/MDRS/mdrs01.asp>

## F-35 Joint Strike Fighter Dinner Meeting & Fly-in

By Steve King, Publicity & Evolution of Flight Chair

The Wright Brothers would have been proud of the Houston Section's October 7<sup>th</sup> evening devoted to aviation in celebration of their upcoming 100<sup>th</sup> anniversary of first powered flight. Approximately 140 attended the Section's dinner meeting that evening at the Lone Star Flight Museum ([www.lsfm.org](http://www.lsfm.org)) on Galveston Island. This included nine aircraft that flew to the adjacent Scholes International Airport for the event. Pilots participating in the fly-in were eligible for partial avgas reimbursement as a Section Evolution of Flight (EoF) incentive. This fly-in included a formation flyover by four homebuilt aircraft lead by Thomas Nguyen (RV-6A). Others in Thomas' flight included Jeff Bertsch (RV-4), Jerry Hajek (T-18), and Bryan Jones (RV-8). Other pilots flying in for the dinner meeting included Elizabeth Blome, Maurice Lehmann, and Kevin Rullman. In addition, both Geff Gebhart and Justin Shemo flew Cessnas from Texas A&M University with six other students as passengers.

Once at the museum, guests ranging from kids to veterans enjoyed full access to the museum's many exhibits of vintage aircraft and gift shop for four hours. The Section provided Evolution of Flight (EoF) giveaways including several hundred balsa-wood glider kits. Most attending also enjoyed a casual dinner of assorted Subway sandwiches, chips, and cookies. Big thanks to Joy King for helping with event logistics and setup. Lockheed Martin kindly agreed to provide a keynote dinner speaker on their new F-35 Joint Strike Flight (JSF), plus some related giveaway posters and decals. Lockheed Martin Space Operations Vice President and SEAT Operation Program Manager, Rick Hieb served as the evening's Executive Host. He spoke briefly about Lockheed Martin's aeronautics heritage and a must read on the Wright Brothers by Tom D. Crouch titled *The Bishop's Boys: A Life of Wilbur and Orville Wright*.

This made for an excellent segue into the evening's talk on the F-35 JSF by Paul Metz, Lockheed Martin Vice President of the F-35 Integrated Test Force and former F/A-22 Raptor Chief Test Pilot. With vintage aircraft as a backdrop, Mr. Metz spoke about the



Thomas Nguyen and Michael Withey with Thomas' homebuilt RV-6A

development of the F-35 from a historical prospective covering the evolution of aircraft companies and strike fighter technologies.

The included the creative use of excerpts for the HBO TV series *From the Earth to the Moon*, part 5 titled "Spider" which most engineers love. It portrays the technical and programmatic challenges the Apollo Lunar Module engineers faced during its development. Mr. Metz's presentation gave insight into the JSF's achievements in developing lift fan technology for short take-off/vertical landing and the challenges of working with varied international partners. The Section thanked him for his outstanding presentation through the gift of a traditional Section mug plus a hot off the press EoF poster. The poster was fitting since it also highlighted the major aeronautical achievements from Leonardo de Vinci through modern day.

Before the dinner meeting, Mr. Metz was given an afternoon tour of the Johnson Space Center including STS-107 mishap video analysis, robotics, Space Station medical equipment, Shuttle simulators, and Mission Control. The Houston Section thanks Blaine Brown and Dorothy Lorence, both of Lockheed Martin, for setting up and conducting the tour. While at the museum, he got a chance to kick a few tires and crawl around in some of the warbirds thanks to Jeff Hagen. It was the Houston Section's pleasure having Mr. Metz down from Forth Worth for the day and we believe he enjoyed the entire outing also.

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AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

CELEBRATING THE  
EVOLUTION OF FLIGHT...

1903-2003 .. AND BEYOND



## Celebrating the Houston Section's 41<sup>st</sup> Anniversary on November 14<sup>th</sup>

*By Norman Chaffee, AIAA Councilor  
President, NASA Alumni League*

Amid the excitement and intense activity of last fall's World Space Congress, we had to postpone the planned celebration of the Houston Section - AIAA's 40th anniversary. Yes, we were founded in 1962 as the result of an organizing effort by Dr. Alan Chapman at Rice University. It is certainly an anniversary we want to celebrate, and we are planning a nice event - albeit the 41st anniversary - on Friday evening, November 14, 2003, in the Alamo Ballroom at the NASA JSC Gilruth Center. We have organized a set of activities that we think will appeal to the members who have been with us since the early days, as well as more recent members. It will be a time of retrospection, celebrating our extraordinary accomplishments of the past 41 years, visiting with old friends, and making new friendships and links between the early founders and today's active professionals.

The anniversary celebration will kick off at 5:00 p.m. in the Gilruth Center's Alamo Ballroom, with a very nice set of heavy hors d'oeuvres (no sit-down meal is planned) and a cash bar. We will create a set of "Decade Tables" at which we will have souvenirs and memorabilia of the Houston Section's activity for that decade. We will also ask members who were Section leaders during that decade to spend some time at "their" table interacting and visiting with the attendees. We will have dedicated "Decade Tables" for the 1960's, 70's, 80's, 90's, and 2000's. You will enjoy looking at the artifacts and records of our Section's activities from those times, and visiting with the people who carried them out. The cost will be \$10 for members and spouses and \$12 for non-members. The student cost will be \$8.

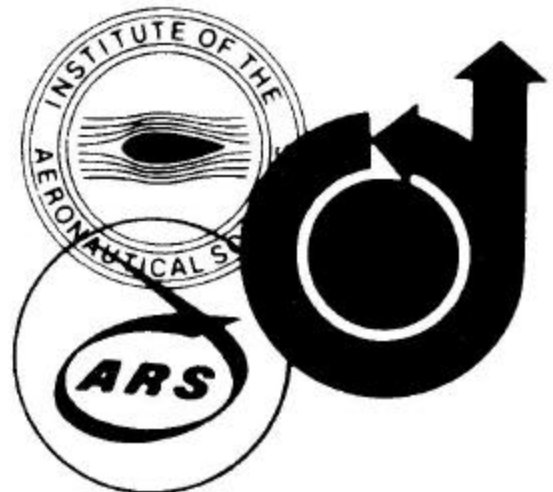
At 5:45 p.m. we will have a brief program, in which key individuals from each decade will give an entertaining, brief overview of some of the accomplishments and memories of that time period. We will start with our founding Chairman, Dr. Alan Chapman, from Rice University, who will revisit the events associated with our initial charter in 1962. Other leaders have been recruited to talk briefly about their decade, and we will wind up with a perspective on our Section's future from current Chairman, Michael Oelke. You will find this retrospection of great interest, and it will serve as inspiration for a robust set of future activities and goals!

After the brief program, Michael Oelke will present membership pins and certificates honoring those who are celebrating their 50th, 40th, and 25th anniversaries as AIAA members.

We will wind up the formal part of the program with the creation and sealing of a Houston Section Time Capsule, containing mementos and meaningful items from our recent times, which will be opened by the Houston Section on our 60th anniversary in 2022. Many of you will be attending the opening at that time, I am sure! We are asking each of you to think about items we should include in the time capsule, and to contact Chairman Michael Oelke (281-226-8689) or Councilor Norman Chaffee (281-483-3777). The items we are considering include records of the Houston Section's recent activities (last year and this year); records of the Columbia accident and subsequent investigation and return to flight plans; records of the recent Chinese taikonaut launch; ISS status; etc. The content can be aerospace-related or something of importance to us in the Houston area which may not be related to aerospace. Please give this some thought and let us know your ideas for items to be included in the time capsule.

We will wind up the evening with a continuation of the social, and visiting between members from all the decades of our existence. It should be an interesting and rewarding evening, and an outstanding networking opportunity for all members!

We particularly want the younger members to take this opportunity to attend and meet and interact with the living history of the Houston Section. We will be personally calling the long-time members to invite them to attend, to bring their memorabilia for display at one of the "Decade Tables", to suggest Time Capsule content, and to meet and visit with our younger members who will be leading us in our future accomplishments.



## Volunteer Judges Needed for Mars Rover Competition

By Joy Conrad King, Pre-College Outreach Chair

When: January 17, 2004 at 12:00-5:00 pm

Where: University of Houston, Main Campus

### Event Description:

Primary (Grades 3-5) and middle school (Grades 6-8) students interested in science and engineering will compete in the design and construction of a model of a Mars Rover to carry out a specific science mission on the surface of Mars. The model will be mostly a mock-up, constructed at a minimal cost (estimated cost of less than \$10-\$25) of mostly found objects and simple art supplies. If desired, teachers may supply students with a low cost (\$10) solar powered car kit to serve as the chassis. Powered and unpowered models will compete separately. The students will build the models as part of a 6-week Fall semester classroom-learning or homework project on Mars. The students will be given design criteria for a rover, and be required to do basic research on Mars that will determine the operational objectives and structural features of their rover. This module may be used as part of a class studying general science, earth science, solar system astronomy or robotics or as a multi-disciplinary unit for a gifted and talented program. Entries will be limited to the first 50 schools to enter. Schools are encouraged to have entire grades participate. Participation in the finals on January 17 will be limited to the best 3 teams of 4 students from each school.

If you would like to volunteer to be a judge, contact Joy Conrad King at AIAA [precollege@aiaa-houston.org](mailto:precollege@aiaa-houston.org) (remove "AIAA" before sending) or call (281) 480-4101 x220.

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*Glider expert Hal Dantone helps the students with the time of flight competition*

## Gliders Everywhere

By Joy Conrad King, Pre-College Outreach Chair

Over 100 kids from as far away as Orange, TX spent an exciting 3 hours at JSC's Gilruth pavilion on Saturday Oct 4th learning about flying and making gliders on a picture perfect day. The event was hosted by the AIAA Houston Section to celebrate the 100th anniversary of powered flight and was organized by Joy Conrad King and Steve King. The morning started with a round table of 7 pilots (Bill Bowers, Adam Dershowitz, Hal Getzelman, John McKenna, Val Paget, Kevin Rullman, and Dave Witwer) who gave the students some insight on what it was like to fly and how they got started. Several different types of aviation were represented including military jets, commercial airliners, home built, and full-sized gliders. Some pilots even came in uniform to the delight of the kids. Next followed some humorous instruction on how to build a glider and fundamentals on what makes it fly by local hand-held glider experts Dennis Wells and Hal Dantone.



*A proud student displays his final product*

The students then got to each make and decorate their own plane with lots of help from parents, pilots, glider experts, and a host of volunteers (Karen Chisholm, Madeline Clark, Michael Grant, Kara Kranzusch, Vicki Lenio, James McLane, Donna Mosesmann, Dean Eppler, and David Rubin). They were all given the same amount of balsa wood and some clay for the nose. Finally the students flew the gliders in two competitions. One competition was for accuracy - the students won a prize if they could fly through two uprights.

The other competition was based on time and was divided into two age divisions. The winner of the K-4 division was Mallory Lenio, and the winner of the grade 5+ division was Matthew Lenio with a flight time of 5.65 minutes. The winner of each division received an illustrated history book of the last 100 years of flight signed by six astronauts. The winners graciously gave their second copy of the book to one of the runner up winners. Everyone had a great time and the spark of aviation imagination was lit – the spirit of the Wight Brothers lives on!

## Wings Over Houston Airshow

By Joy Conrad King, Pre-College Chair  
and Steve King, Publicity & Evolution of Flight Chair

The Wings Over Houston Airshow this year was under perfect skies at Ellington Field on October 18 – 19. There were many spectators in attendance and lots for them to see. The static aircraft displays included a B-52 Stratofortress, an AH-64 Apache, plus many old warbirds from the Commemorative Air Force and the Lone Star Flight Museum. It was also fitting that the largest aircraft there (a C-5A Galaxy) was right next to the smallest (a Pitts). There was also a WC-130 hurricane hunter plane there from the Air Force that has flown through the eye of many hurricanes. They have a special chute in the back to drop instruments into the storm, and they also spend some of the year flying through storms off the coast of Alaska and Hawaii.

Besides the static displays, there were many aerial demos. The day started with a heritage fly over spanning 50 years with a WWII Navy fighter and a F/A-18E/F Super Hornet. From there were stunt planes, parachuters, gliders, and some impressive demonstrations by a F-16C Fighting Falcon, F-15 Eagle, and a AV-8B Harrier. In the afternoon the Commemorative Air Force did their traditional WWII battle reenactments with lots of explosions. On the ground, a modern M1A1 Abrams tank demonstrated some maneuvers, and the “rocket truck” Shockwave speed down the runway trailing a huge jet flame.

AIAA members enjoyed a discounted admission this year to celebrate the Wright’s anniversary, and many AIAA Texas A&M students traveled from College Station to take advantage of the offer. The Houston Section also supplied the Civil Air Patrol (CAP) with several AIAA Celebration of Flight give-aways including balsa wood planes and Wright Brother word puzzles. The CAP gave out the goodies at their booth next to their Cessna 182 search and rescue airplane.



Logo courtesy of [www.wingsoverhouston.com](http://www.wingsoverhouston.com)



*Wings Over Houston Heritage Fly Over.  
From left to right: F-15 Eagle, P-51 Mustang, F-16  
Fighting Falcon.*

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## The International Space Activities Technical Committee

by Douglas Yazell, Vice Chair- Technical  
with help from Pdraig Moloney and Jim McLane

China is now third nation to send a person into space, an historic and inspiring feat. This is good timing for some of us, since we are trying to renew the energy once devoted to our section’s International Space Activity (ISA) technical committee. Pdraig Moloney volunteered a few weeks ago to be the new chair of this committee. We heard about a 1989 visit here from a Chinese space program delegation, and that led us to Jim McLane, who met with me on short notice for an interview.

Our ISA technical committee already existed in 1987 when Jim began his activity with it. In the spring of 1986 (after retiring from his space program career in 1983) Jim made the first of his five trips to China. He was a member of a delegation of Citizen-to-Citizen Ambassadors, a program started by President Eisenhower. By the time he returned from that trip, he had a proposal ready for our section to continue the unofficial diplomacy. In September of 1987 the AIAA Houston section proclaimed its “sister section” relationship with the Shanghai Astronautical Society (SAS).



In September of 1988 a delegation from our section's technical branch visited China at the invitation of their Chinese sister section. Their trip focused on tours of the Chinese space facilities, and they were treated like VIPs by their hosts and the personnel at these sites. Jim was especially interested to learn as much as possible about his Chinese counterparts in the space program, since they were doing the same work in such a different culture.

In 1989 a delegation from the SAS arrived from China at our section's invitation. We rolled out the red carpet, and we were as open as the Chinese had been when they were the hosts. The visitors had a full schedule, including a site tour of NASA, a banquet (with all of our section members invited), a visit to the Galleria, and discussions between technical counterparts. Jim McCoy, who visited China in 1988 with the Houston delegation, treated the delegates to rides around the bay area in his Beech Bonanza. That might have impressed the visitors more than anything, since private ownership of small airplanes was not at all familiar to them.

Our section initiated the "Seminar on Exchange of Technical Information Between Nations" of April 1989. Jim emphasized that this gathering was co-sponsored by NASA/JSC. Attendees included NASA managers, the Commerce Department, the State Department, all of the military services, and foreign businesses operating in China, since federal regulations on this subject were conflicting, confusing, and confounding.

In 1992, a second delegation of seventeen people from our section visited China at the invitation of our sister section. They toured space facilities Beijing, Chengdu, Xichang, Shanghai, and Suzhou. As before, James and Dorothy McLane and the other delegates were treated like VIPs by their hosts who toured the country with them, and by the personnel who were managing and working in these space program facilities.

Our section also formed sister section relationships with India, Australia, and Austria. Such relationships are one focus of our newly-revived ISA technical committee. Lunch-and-Learns will also be organized. Our ISA technical committee and our Astrodynamics technical committee will co-sponsor a Lunch-and-Learn in January of 2004 about the European Space Agency's Automated Transfer Vehicle and its automated rendezvous and docking with the International Space Station, presented by Brian Rishikof.

Jim can no longer keep up with this Chinese-American sister section relationship, and we would like to see it continue. Our Chinese counterparts are still standing by to hear from us. (In his role as our

representative, Jim still receives monthly mail from our sister section, though he has reluctantly stopped responding.) We are searching with great energy for the successors who will carry on this tradition with China and other nations. As China becomes, as of October 15, 2003, the third nation to send a person into space, we invite aerospace professionals and students to join our section's International Space

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## Calendar

### **November 2003**

14 Dinner Meeting (41<sup>st</sup> anniversary)

### **December 2003**

11 Dinner Meeting

17 Wright Brothers Centennial of Flight Anniversary

### **January 2004**

5 – 8 42<sup>nd</sup> Aerospace Sciences Mtg (Reno)

17 Mars Rover Model Competition

22 Dinner Meeting

24 Future City Competition

### **February 2004**

20-22 Mars Settlement Design Competition

22-28 National Engineers Week

### **March 2004**

23 Dinner Meeting – Dr. John Lienhard

25-27 Science & Engineering Fair of Houston

### **April 2004**

1-3 FIRST Robotics Lone Star Regional (Reliant Park)

22 Dinner Meeting

### **May 2004**

6 Space Day

20 Dinner Meeting

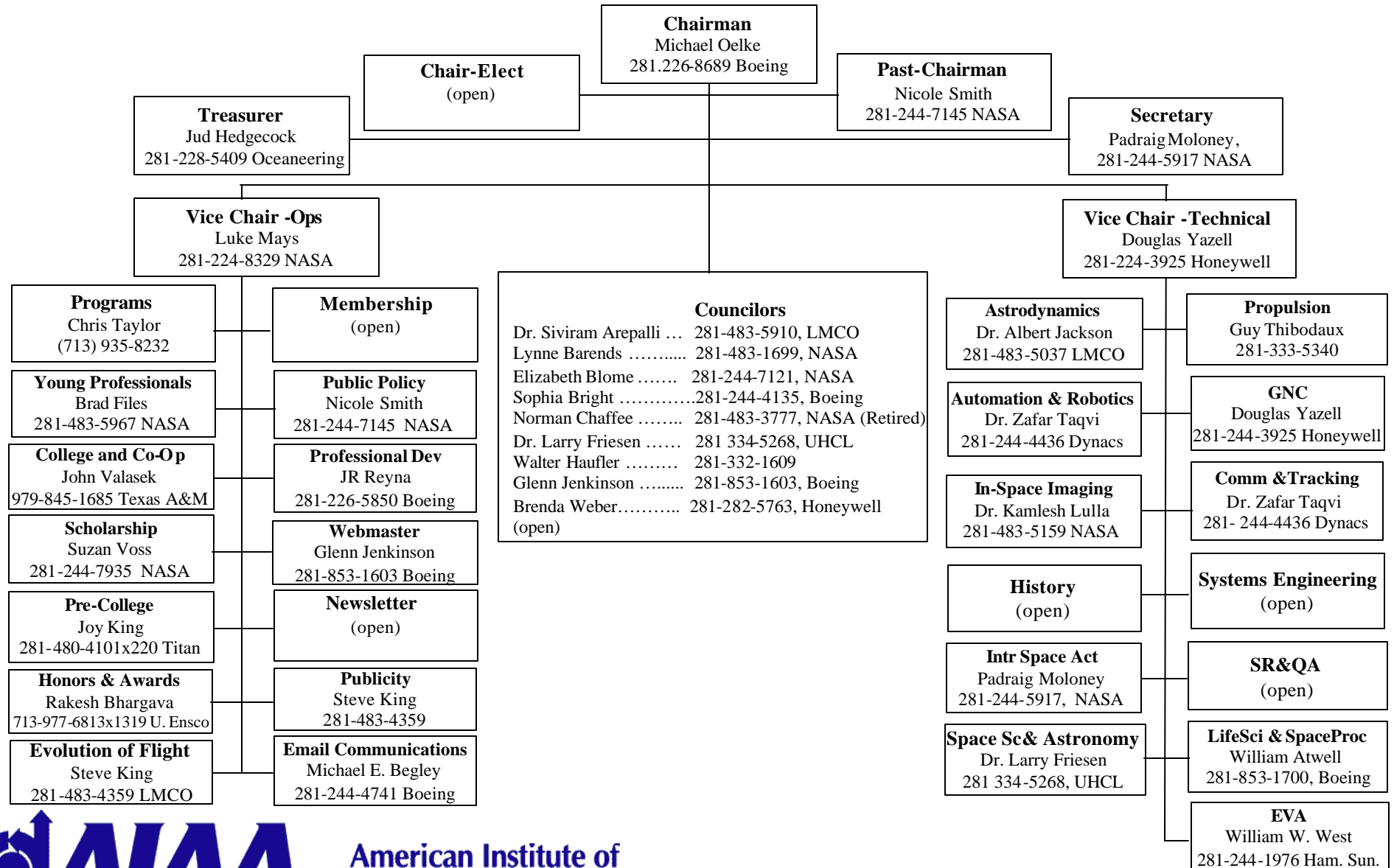
### **June 2004**

17 Awards Banquet



# AIAA Houston Section Executive Council for 2003-2004

as of 29 Oct 2003



American Institute of  
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**November 2003**

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