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Special Notes on Evolution of Flight

As we approach the centennial of powered flight, AIAA and other aerospace-related organizations have been working on various celebration and recognition activities.

Living Legends and other efforts

The AIAA San Francisco Section has been pursuing a project known as *Living Legends*. In collaboration with NASA Ames, it is focused on capturing the human side of flight innovation. The goal is to conduct video interviews of Bay area aviation pioneers and produce a browsable collection of PDFs and video DVDs.

More on this and other Evolution of Flight efforts can be found starting on continued from page 5. (Note that this is available in PDF only.)

Upcoming schedule

The schedule of events for the section is being altered during the next few months, in large part due to Evolution of Flight activities. While there is no October dinner meeting, a couple of other events are planned, including a special event on November 6. When the details are confirmed, the section website (<http://www.aiaa-sf.org>) will post them and be referenced in the regular section e-mail updates.

Your current e-mail address is in your member profile at the AIAA national website (<http://www.aiaa.org/members>). If you have not received e-mail updates from "AIAA San Francisco" in the last few weeks, then the address there is probably incorrect.

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NOTE: Inside pages 3 through 6 are available in PDF form at: <http://www.aiaa-sf.org/newsletter>



Left: cigar shaped (cylindrical) object in Saturn's A-ring, which could be present elsewhere in the solar system. Their electromagnetic properties could have a profound effect on Earth's weather, environment, and power-distribution systems. Source: book jacket of *Ringmakers of Saturn*, by Dr. Norman Bergrun.

Thursday, September 25, 2003
Ramada Inn, Sunnyvale, CA

Evidence of ET Intelligence

Dr. Norman Bergrun
Founder
Bergrun Research
Los Altos Hills, California

Could there exist in the universe ET intelligence superior to that of humans? Is it possible that such intelligence could develop in the approximate 15 billion years since the big bang?

This presentation will present visual evidence which suggests that not only is superior ET intelligence in existence, but also that it is accompanied with technology advanced far beyond anything known to humans.

Most of the visuals are from the Voyager and Apollo missions. These images portray strange objects in the solar system...at planet Saturn, at Uranus' satellite Miranda, and at the Moon. One of the Voyager mission images confirms a sighting in 1971 of a highly advanced ET object near the Earth. That these manifestations can occur without the existence of ET intelligence is difficult to escape.

In short, new and powerful physical and intellectual forces exist which need to be reckoned with. The implications for humankind are enormous in that every discipline is impacted.

Evidence of ET Intelligence, continued on page 7

Welcome from the New Chairperson

Fanny Allison Zuniga
Chairperson, 2003-04
AIAA San Francisco Section

Greetings!! As the new council year draws upon us, I would like to take this time to introduce myself and provide my vision for the 2003-04 year. First, of all, I am very excited and appreciative to have the opportunity this year to serve the council as chairperson. I have been a member of the AIAA San Francisco council since 1999. Since that time I have held many positions including Programs Director, Treasurer, Vice-Chair and finally, Chairperson. I originally joined the council after attending a few dinner meetings and observing the wonderful contributions that this organization makes to the community, such as, rewarding students with scholarships, visiting local schools to talk about aerospace, and bringing interesting speakers to the Bay Area. I immediately knew this was a worthwhile organization to invest my time in and with a little nudging from my friend, Steve Jaeger who was chairman then, I quickly joined the council.

I share this story to urge others as well to come out and attend some of our meetings/programs and if you like what you see, please consider joining the council. All of the council members are volunteers and take time away from their busy careers in aerospace/education to serve the community in a positive way. I, myself, am an aerospace engineer and project manager at NASA Ames Research Center. I hold a B.S. degree in Aerospace Engineering from Syracuse University, an M.S. degree in Aerospace Engineering from University of Southern California and an advanced graduate Engineer's degree in Aeronautics and Astronautics from Stanford University. Having started my career at NASA Dryden Flight Research Center, I have now worked for NASA for almost 15 years. I currently work in the Space Transportation Projects Office at NASA Ames and serve as project manager under the Next Generation Launch Technologies and Orbital Space Plane programs.

Although my workload at NASA can be very challenging and demanding at times, I find the time that I spend on the council to be very rewarding and worthwhile. It gives me an opportunity to give back to the community which is very important to me. Also, I have wonderful and dedicated people on the council who I trust will help me throughout the year as they always have done in the past. Our new officers this year are: Dr. Prasad Gogineni, Vice-Chair, Todd Farley, Treasurer and Rick Kwan, Secretary. These officers together with our returning council members have done outstanding work in the past and I'm certain this team with my leadership will work hard again this year to bring you all a wonderful year of programs and events.

I am especially looking forward this year to our Celebration of Flight events to commemorate the 100th anniversary of the Wright Brothers' first flight on Dec. 17, 1903. This will be a highly publicized and historic event which will be recognized around the world. We will be bringing special programs to the Bay Area to share in the celebration of this event. This promises to be an exciting time for all of us as we reflect back on the achievements of the past 100 years and look forward to the next 100 years of flight.

In addition to the Celebration of Flight events, we will continue with our monthly dinner programs striving to bring you interesting lecturers on current "hot" topics in aerospace. With two rovers under way to Mars and planned landings in January, there will certainly be a "buzz" again for Mars news and we will certainly try to bring that to you. In addition, the Columbia Accident Investigation Board report is due to be out soon which will enable NASA to return the shuttle fleet back to flight status. We hope to bring you interesting speakers to cover many of these topics to keep you informed of the latest current events in the aerospace world.

Finally, I plan to continue our section's annual events such as, Engineer of the Year Award, Galileo Scholarships, Student Essay contests, technical lecture series and Honors & Awards banquet. As you can tell, this upcoming year will be a very busy and exciting year for us. I hope you will take time out to enjoy this year's events and if you can, consider joining the council. It has certainly been and continues to be a rewarding experience for me as it can be for you, too.

Dayton, July 2003

Section Members Honored as AIAA Fellows

The AIAA San Francisco Section congratulates three of its members on being named as Fellows of AIAA.

Scott Hubbard is director of NASA Ames Research Center. He was previously Mars program director for NASA, and is credited with getting the Mars Exploration program back on track. He has also made significant contributions to astrobiology, the understanding of radiation detection materials and devices, and managed the NASA Lunar Prospector mission.

John W. "Jack" Boyd is executive assistant to the director of NASA Ames Research Center. For over 50 years, he has made contributions to the aerodynamics of supersonic fighters and bombers, and has held various leadership roles at Ames, NASA Dryden Research Center, and NASA headquarters. He has also been involved in engineering education, and has taught at University of Texas.

Brian J. Cantwell is a Professor of Aeronautics and Astronautics and Mechanical Engineering at Stanford University, and is Department Chair of Aeronautics and Astronautics. His particular research interests are in the area of turbulent flow. He also leads the Aero Fluid Mechanics Lab at Stanford.

The three were among 30 newly elected fellows honored at an AIAA banquet on July 15, 2003, in Dayton, Ohio -- the site of the International Air & Space Symposium and Expo, and the town where the Wright Brothers carried out their painstaking research 100 years ago.

Additional Info

- <http://www.aiaa.org/Dayton2003/awards.cfm> lists other newly elected Fellows and Honorary Fellows, and other awards.

Winning Essays of the 15th Annual Essay Contest

Winners of this year's Annual Essay Contest were honored at the AIAA San Francisco Section dinner meeting, July 24, 2003. The contest, commemorates the Apollo 11 landing on the moon on July 20, 1969. Since this year is the centennial of powered flight, the chosen theme for this year's contest is: *What will be the new developments of flight in the next 100 years?*

The contest is open to 7th and 8th graders enrolled in a school in one of the bay area counties covered by the AIAA San Francisco

Essay Contest Winners

- **First Place, 7th Grade:** *Lewis Geist*
Hoover Middle School, San Francisco, CA
Sponsoring teacher: Dennis Kujawa
- **Second Place, 7th Grade:** *Chase Wilson*
Hoover Middle School, San Francisco, CA
Sponsoring teacher: Dennis Kujawa
- **Third Place, 7th Grade:** *Noah Frank*
Hoover Middle School, San Francisco, CA
Sponsoring teacher: Dennis Kujawa

Section – Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Santa Cruz. The essays are judged on

- originality and realism of ideas presented,
- soundness of logic used to develop ideas, and
- quality of composition and clarity of expression.

This year's winners are listed below.

- **First Place, 8th Grade:** *Amit Arunkumar*
Redwood Middle School, Saratoga, CA
Sponsoring teacher: Joseph Christie
- **Second Place, 8th Grade:** *Rebecca Johnson*
Peterson Middle School, Sunnyvale, CA
Sponsoring teacher: Donna Dickes
- **Third Place, 8th Grade:** *Emily Jones*
Redwood Middle School, Saratoga, CA
Sponsoring teacher: Martin Belles

First Place, 7th Grade

Flying into the Future

Lewis Geist
Hoover Middle School
San Francisco, CA

How will aviation change in the next one hundred years? I believe that airplanes will become a bigger part of world transportation. I think the airplane manufacturers will try to find ways to save money.

One of the ways I think airlines could save money would be by using solar power. Solar panels are a big investment, but in the long run they would cost less. Today only fifteen percent of the potential solar energy is collected by a solar panel, but in the future it will be possible for a panel to collect double or triple that. Once solar panels can be that much more efficient, they will be a sensible replacement for gasoline. Still, in an emergency all airplanes also would carry a fuel tank.

Currently a solar panel is not that light and the batteries to store their energy are also heavy. They will have to invent lighter panels and batteries for airplanes to use. The plane would use almost no fuel and that would lighten it but it might still be a little too heavy. So the airlines could use plastics instead of metal for the hull of the airplane.

Whether an airplane is in flight or on the ground, the solar panel would still collect and store energy whenever it would be in sunlight. By using solar panels the airlines will help the environment and save money at the same time. Air travel is looking bright in the future.

7th Grade Essays, continued on page 4

First Place, 8th Grade

Flight Evolved

Amit Arunkumar
Redwood Middle School
Saratoga, CA

Flight – The motion of an object in or through a medium.

During the next one hundred years, this word will change the world. People will think about it through a whole different perspective than that of which we have today. Flight will be made an everyday routine. Instead of driving your car you'll simply hop into a fission-powered plane and cruise to your destination.

Flight will be so common that it will be a systematic part of your life. Taking a short 300-mile trip to work will take at most an hour. Planes will run on electricity completely, whether it be solar powered, fission powered or another technique. Planes, helicopters, and hovercrafts will be auto piloted to avoid human errors and save lives. This would allow for the overall speeds to increase dramatically, resulting in getting places faster making flight more convenient than automobiles. The overall amount of flying vehicles will increase due to the need to travel to faraway regions. Higher altitudes will be reached making travel faster and more planes able to travel a single route at the same time. All planes will be equipped with rotating engines in order to land in small spaces like a helicopter. This would let planes land in all sorts of conditions and terrain without a large runway or airstrip. Flight in the 22nd century will evolve into an enormous part of our lives.

8th Grade Essays, continued on page 4

Second Place, 7th Grade

Space Age Flight

Chase Wilson
Hoover Middle School
San Francisco, CA

What will be the new developments in flight in the next 100 years? 100 years is a long time ñ 100 years ago most people didn't even have electricity! So by 2103, flight will probably be very advanced and big advancements are likely even in the near future.

I think that by the year 2020 they will have non-piloted airplanes, allowing more cargo room at less cost. Instead they would have on and off board computers performing pilot functions. If for any reason the on board computer couldn't fly the plane correctly, the off board computer would take over and land the plane.

The plane would no longer need the use of runways. It would be able to hover and have vertical landing and takeoffs. This would reduce waiting in line for takeoffs and landings, and also make slightly shorter trips.

Inside the plane would include open areas with bench-style seating. Passengers could relax in the lounge or even dance in the piano bar. Almost like a cruise ship except computerized and it would be a much smoother ride because of the less air turbulence at higher altitudes.

Advantages in flight are growing rapidly, but new ideas and inventions will be needed. New and efficient technology will help the economy, especially travel and vacation destinations and also introduce travel to Mars and other exotic locations!

Third Place, 7th Grade

Evolution of Military Flight in the 21st Century

Noah Frank
Hoover Middle School
San Francisco, CA

I believe military flight will change dramatically in the next century. Fighter jet will be passed out in favor of Stealth bombers. The targets that these planes strike will change. And to deal with these new planes and targets, we will develop new weapons and tactics.

Jet fighters will probably become obsolete this century. Since our enemies have changed from superpowers to small, rogue states and terrorist organizations who have small, poor, air forces, the need for fighters like the F-16 is doubtful.

Our new enemies hide in rugged territory and are armed with small arms, radar complexes, and surface to air missile sites. Countering them will be Stealth bombers armed with smart bombs that can evade radar, avoid ground fire, and hit their targets with perfect accuracy. Our planes won't be bombing troops or tanks; they will be accurately targeting terrorist leaders, camps, and other vital targets.

Because of this change in planes and targets, our armed forces will have to develop new weapons and tactics. There has been a great leap in smart weapons in the last decade, but we will probably see just smart bombs in the future. The number of planes will dwindle, but the planes themselves will improve.

The next hundred years will see a small but sophisticated fleet of combat planes. Carrying a full load of smart bombs, they will slip into enemy territory undetected, strike their targets with precision, and then slip away quietly.

Second Place, 8th Grade

Aerospace Essay

Rebecca Johnson
Peterson Middle School
Sunnyvale, CA

I gaze into my crystal globe and look into the future of aero-space technology. I see an empty sky full only of an occasional wisp of cloud. Suddenly, a plane rushes past disarranging the clouds at a speed that would make you blink. New ways of building motors and harnessing energy have been found and quickly put to use. The plane can go farther, faster. The distance that took people three hours to travel now takes them forty-five minutes.

The scene in the crystal ball shifts and I see out into space. The space station has grown larger and people now live there. Overcrowding on earth has promoted life in space and a small city now thrives on the station. It is a home away from home for many.

A hum comes from the crystal ball and it shows a colony on the moon. It is enclosed in a bubble-like lid that keeps the oxygen in and the moon dust out. Like the station, a miniature city is growing.

Once again the scene changes. This time it is a scene on the earth. People in suits sit around a table discussing a grave matter. Finally an agreement is made. They will send an expedition to Mars using the new materials they have invented.

Most people think that thousands of advancements will be made in the next century (look at the last one!) but I disagree. A century is only 100 years and developments take a long time.

Third Place, 8th Grade

What will be the new developments of flight in the next 100 years?

Emily Jones
Redwood Middle School
Saratoga, CA

Space flight needs to be quick and inexpensive so mankind can search for rudimentary forms of life in the solar system and beyond. Existing rocket fuel takes up too much room, is too costly, and does not provide the necessary speed for distant travel. A more efficient type of fuel would be particle beams aimed at an earth orbiting spacecraft from a ground or space generator. The beams would hit the vehicle, propelling the mass forward. The effect would be like that of a high power water hose accelerating a small wooden block, for instance. Since the electrons in the beam would be traveling at the speed of light, the spacecraft could reach similar speeds.

Scientists have speculated that an electron particle beam could be created using Iceland's superfluous geothermal energy. This energy could be a fuel of the future for space flight.

Using this method of travel, satellites could be sent to far away destinations such as Europa, where the promise of life seems probable. The Galileo probe found evidence of a liquid ocean beneath Europa's ice, and the Hubble Telescope detected a thin atmosphere of oxygen on this Jovian moon. Electron particle beams would make it possible to send probe after probe quickly and cheaply as new discoveries are made.

Our nation should research this energy source and adapt its use for future space missions.



Far left: Malcolm and Allen Loughead in F-1 seaplane in Santa Barbara. **Left:** replica of 1903 Wright Flyer in NASA Ames 40x80 wind tunnel.

Evolution of Flight Campaign

Roughly three months from now, we will celebrate the centennial of powered flight. Various regional and national organizations have been making preparations for its celebration.

AIAA began the *Evolution of Flight Campaign*, according to the campaign website, to "recognize the passionate men and women who have challenged history and defined aerospace achievement ... to celebrate the legacy of flight, encourage new talent, and lay the groundwork for the next 100 years of innovation in aviation and space technology." A few campaign highlights are described here; more details can be found on the campaign website, listed at the end of this article.

AIAA has also provided support to various sections around the country to pursue unique campaign activities in their areas. The San Francisco Section embarked on a couple of activities – the *Celebration of Flight* banquets, and the *Living Legends* video history program.

Class of 2003 Ambassadors

Recognizing that flight has always captured the imagination of youth, AIAA established the *Class of 2003 Ambassador* program with the intent of helping to turn youth into aerospace ambassadors. Created for students who would graduate from high school in the year 2003, the program asked them to carry the centennial message and their experiences back to their classmates and communities. AIAA organized two field trips per year for the ambassadors, provided young professional mentors for each ambassador, and encouraged them to participate in local section events whenever possible.

Of the 20 ambassadors chosen, 18 were from the United States; the remaining two came from France and Germany. Among the ambassadors was Cindy Li of Sacramento's El Camino Fundamental High School. She wrote about her experiences in the May-June 2002 issue of the *AIAA San Francisco Section In4m-Letter*.

These ambassadors have now graduated from high school and are entering their first year of college. Photos from their four years of semi-annual excursions are posted at AIAA's Evolution of Flight website. (Note to aerospace die-hards: the photos will make you jealous.)

Wright Flyer Tour

A replica of the Wright Flyer is completing its rounds as part of the AIAA 1903 Wright Flyer Centennial Tour and Exposition. Built by the AIAA Los Angeles Section, it was tested in the 40x80 wind tunnel at NASA Ames. The Wright's wing-warping scheme

worked, aerodynamic flutter did not occur, and the unstable flight properties and structural integrity of the Flyer were verified.

For the past year, the Wright Flyer replica has been on tour around the country. It's most recent stop was at the Dayton Air Show 2003, which coincided with the AIAA/ICAS International Air & Space Symposium and Exposition during July.

The final stops on the tour, all in California, are:

- September 12-28, 2003 – Los Angeles County Fair, Fairplex, Los Angeles, CA.
- October 25-26 2003 – Edwards Air Force Base Open House, Hanger A, Edwards, CA.
- October 29-December 4, 2003 – Northrop Grumman Corporation, 1 Hornet Way, Building 902, El Segundo, CA
- December 17, 2003 – FAA Flight Deck, Lawndale, CA.

Celebration of Flight

To understand the origins of powered flight and its impact, the San Francisco Section held a couple of banquets entitled *Celebration of Flight* at the Hiller Aviation Museum in San Carlos.

The first banquet, in June 2002, featured Dr. John Anderson, noted author of a number of texts in aeronautical engineering, and curator for aerodynamics at the Smithsonian National Air & Space Museum. He spoke on the competition for first flight – a goal sought by Samuel Langley and the Wrights. He discussed the wind tunnel and glider experiments that the Wrights performed, and the events that ultimately led up to their historic first flight on December 17, 1903, at Kill Devil Hill, North Carolina.

The second banquet, in June 2003, featured Dr. Roger Launius, former historian for NASA, and now space historian at the Smithsonian National Air & Space Museum. He talked about the origins of the U.S. space program and its roots in what he termed the "von Braun paradigm," the motivation of political will and international prestige, and where this leaves the space program today.

Both banquets were well-attended, thought provoking, and enthusiastically received by audiences that were already informed on the science and engineering of aeronautics and astronautics.

Living Legends

The Bay Area *Living Legends* project is intended to preserve history as described by the luminaries of aviation from the San Francisco Bay Area who helped aviation from a mere curiosity to an established mode of safe transportation that it is today. It is being recorded in video format and will enable future generations to learn about the past and the vision these pioneers had of the future.

The project focuses on the human aspect of aviation, i.e., the people who worked in industry, academia and government to make

Evolution of Flight Campaign, continued on page 6

Evolution of Flight Campaign, continued from page 5

aviation possible. It will keep a spoken and a visual record of how they got interested in aviation, their heroes, their accomplishments, their frustrations and their message for the future generations.

One of the products of the project will be a series of DVDs. These will be widely distributed within the institutions that are expected to participate in project simply because it will enable them to educate their workforces about their past. The DVDs will also be made available to AIAA to distribute to the Smithsonian Institution and other libraries worldwide.

AIAA SF has been working with the video documentation group at NASA Ames Research Center to conduct the interviews. Currently, about 20 interviews have been recorded, and work has also been on initial presentation of the material.

Compiling the List

In order to initiate the Living Legends project, the AIAA San Francisco Section compiled an initial list of 100 pioneers from the San Francisco Bay Area who have made significant contributions to the arts and sciences of aeronautics and astronautics. This list was compiled with assistance from NASA Ames Research Center, Stanford University, Lockheed Martin, University of California at Berkeley, and Loral.

A list of questions was prepared with the help of the NASA Ames video documentation group. Each interviewee was paired up with a “buddy.” Both the invitation and the list of questions were emailed to the interviewee and the buddy. A convenient schedule for the interview was then set up. Arrangements were then made with the NASA Ames Visitors Office to permit them to come to the main auditorium to be interviewed.

The NASA Ames video documentation staff is also in contact with the Hiller Aviation Museum in San Carlos and the Western Airspace Museum in Oakland to document the history of aeronautics and astronautics in the San Francisco Bay Area.

Interview Questions

The list of interview questions serves as a starting point. However, in the course of an interview, other points of interest inevitably arise – sometimes from a triggered memory, which itself may come from the prompting of the buddy. The set of initial interview questions includes the following:

- What is your current (or last, if retired) position?
- What first attracted you to your field of study?
- Where did you receive your academic training?
- How did you come to your current (or pre-retirement) position?
- What have been the (3) most significant projects you’ve been involved with? For each of these:
 - During what time period did the project take place?
 - What was the goal of the project? Why was that goal important?
 - Who else worked with you on the project?
 - What were your specific contributions?
 - Briefly describe the progress of the project.

- What kinds of equipment, resources, or techniques were used?
- What was the eventual outcome of the project?
- Have the results been directly applied to industry? Have others taken it in different directions, or added to it?
- How did this project compare to other similar projects that may have been undertaken at or near the same time by other groups or individuals?
- Who would you recommend us to interview?

The Initial Cut

A video interview may be planned for a half hour. However, as memories come back and other questions surface, they can go for two hours. This provides a wealth of material in video and written form.

Although interviews are still on-going, assembly of an initial product has begun. Transcripts are being reviewed. Key points within the interview are being identified; sometimes this requires subject matter experts to do the review.

As the centennial date approaches, it is hoped that the initial product of the video interviews will be available for viewing by that time. When it becomes available, AIAA San Francisco Section members will be notified by e-mail and notices will be published on the section website.

Addition Information

- *AIAA Evolution of Flight Campaign* website describes campaign programs, provides a calendar of upcoming events, a gallery of images, and educational “click & learn” activities. <http://www.flight100.org>
- *Class of 2003 Ambassadors* - photos, program description.. <http://www.flight100.org/activities/ambassador.html> See also the “image gallery.”
- *Experience of a Life-Time*, by 2003 Ambassador Cindi Li, appeared in the May-June 2002 of the *AIAA San Francisco Section In4m-Letter*. <http://www.aiaa-sf.org/newsletter/2002-MayJun/2002-MayJun-scr.pdf>
- *U.S. Centennial of Flight Commission*, established by Congress to recognize the Wright Brothers’ achievement, acts as a coordination body across federal agencies and other interested organizations. <http://www.centennialofflight.gov>

Short Notes

Teacher of the Year — The Berryessa Union School District selected **Juanita Ryan** as its Teacher of the Year. She is also the AIAA SF Section Pre-College Outreach Director. She and other teachers will be honored at the Santa Clara County Office of Education (SCCOE) Teacher Recognition Day, on September 22, at the San Jose Repertory Theater.

Regional Leadership Conference — Several members of the AIAA SF council attended the AIAA Regional Leadership Conference, August 15-16, in Austin, Texas. While some were to learn, others were there in a resource capacity. The section won several AIAA honors for the year ending in June 2002.

About the speaker

Dr. Norman Bergrun is an alumnus of Ames Research Laboratory, NACA (National Advisory Committee for Aeronautics) predecessor of Ames Research Center, NASA where he worked twelve years as a research scientist. At Ames, he pioneered the setting of design criteria for airplane thermal ice-prevention and the developing of roll-stability laws for airplanes, missiles and rockets.



He joined Lockheed Missiles and Space Company (now Lockheed Martin) where he was manager of the planning and the analysis of flight tests for the Navy Polaris Underwater Launch Missile System. These positions encompassed all the engineering disciplines. During his thirteen years at Lockheed, he also served as a senior scientist having responsible analysis cognizance of special space-satellite applications.

After a short tour of duty with Nielsen Engineering and Research, in 1971 he founded Bergrun Engineering and Research, parent of Bergrun Research founded in 1999 especially for world-wide web activities.

An Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and first Chairperson of the San Francisco Section, he usually is active in Congressional Visits Day events on Capitol Hill. As Deputy Director-at-Large for the AIAA western region, he is cognizant of section activities in seven western states. Other memberships include The Planetary Society, The Association for the Advancement of Science, The Aviation Hall of Fame, the National Society of Professional Engineers, the Federation of American Scientists and the Scientific Faculty of the International Biographical Centre, Cambridge, England.

Dr. Bergrun holds a BSME degree from Cornell University, an LLB from LaSalle University Extension, and a DSc (Hon) from World University. He also has engaged in graduate studies at Stanford University and holds a California Professional Engineer (PE) license. He is a founder of the California Society of Professional Engineers Education Foundation, is author of two books: "Tomorrow's Technology Today" and "Ringmakers of Saturn" and has published about 100 papers.

Two recent manuscripts, "Lunar Life Forms: Revelations of Apollo 14" and "Mars Puts on a Good Face: The Masquerade", have been registered with the Library of Congress, Washington, D.C. He has given lectures in the United States, Canada, England and Europe.

Credited with numerous awards and citations including the California Society of Professional Engineers Archimedes Engineering Achievement Award and a Special Service Citation for a decade of Contributions to the AIAA National Public Policy Committee, he is listed in "Who's Who in the World", "Who's Who in America", "Who's Who in Science and Engineering, and other reference works.

His interests include photography, NASA student activities and music, having played as a concert musician at Carnegie Hall with the Cornell University Band. He is a co-founder of "Aurora Singers", a 60-voice choir. His photographic interest ultimately expanded into his professional life.

At NACA Ames Research Laboratory over a period of years, Bergrun took the photos of icing conditions experienced by the Curtiss Wright C-46 test airplane in natural-icing environments. Photo laboratory professionals tutored him prior to the first flight. On returning to home base, he specified photo development requirements and analyzed the images obtained.

During the icing-project instrumentation phase, he caused the building of an "electromagnetic tunnel". This instrument enabled determination of flow-velocity value anywhere in the field of an arbitrary 2-dimensional shape. Flow velocity at any field point was unamenable to calculation at the time. For the Navy Polaris Underwater Launch Missile System Project, Bergrun established a closed area to receive and catalogue all photos and film obtained by test-range cameras. Its purpose was to provide assistance in the analysis of telemeter tracking data. During his years as manager of planning and analysis, he scrutinized miles of photo coverage of Polaris flight tests...successfully correlating these data with inception of malfunctions recorded by telemetry and thereby pinpointing where hardware improvements were needed. Soon after publication of "Ringmakers of Saturn" in 1986, approximately four trips annually have been made from the West Coast to the NASA Goddard Space Flight Center. During this time, beginning with the early missions, many thousands of images have been examined of Mars, the Solar System Planets and Satellites, the Moon, the Sun as well as Hubble Telescope and Shuttle images. This process is an ongoing activity of Bergrun Research.

The **AIAA SAN FRANCISCO SECTION IN4M-LETTER** is a publication of the San Francisco Section of the American Institute of Aeronautics and Astronautics, a non-profit society whose primary purpose is to advance the arts, sciences, and technology of aeronautics and astronautics and to foster and promote the professionalism of those engaged in these pursuits.

Section Officers and Council: A complete directory of the section council can be found at <http://www.aiaa-sf.org>.

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Calendar

AIAA SF Section Events

- Thursday, September 25, 2003: Norm Bergrun on *Evidence of ET Intelligence* – Ramada Inn Silicon Valley, 1217 Wildwood Ave, Sunnyvale, CA [Tel: 408-245-5330] Cost: AIAA members and guests - \$20, Students - \$15. Cash or check only. (Related article on page 1.)

Dinner Meetings Agenda: No-host cocktails at 6:30pm, dinner & program from 7pm to 9pm. **Registration:** By Monday preceding dinner. On-line at <http://www.aiaa-sf.org>, or contact Programs Director by e-mail or phone. **Cancellation:** By Wednesday preceding dinner. Please contact Programs Director. (AIAA pays for all reservations, including no-shows.)

More Info, Questions, Comments, Jokes: Contact our Programs Director at programs@aiaa-sf.org.

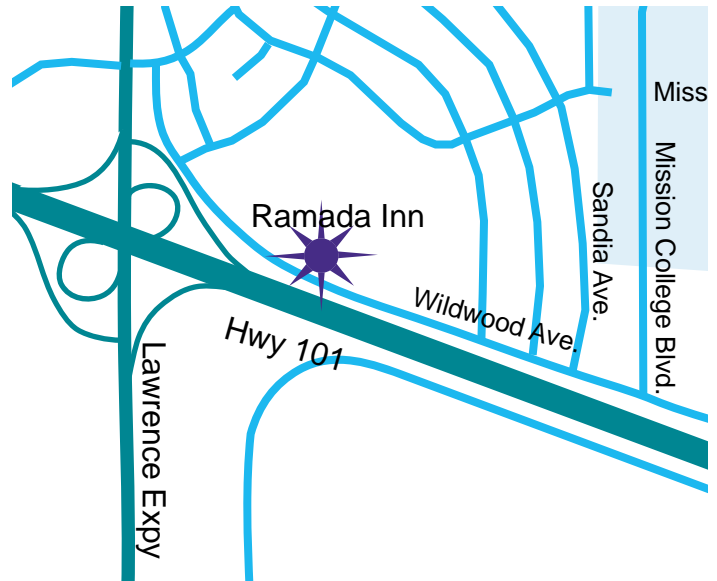
AIAA National Programs

Below are selected conferences, workshops, and other programs sponsored or organized by AIAA.

- 2nd AIAA “Unmanned Unlimited” Systems, Technologies, and Operations – Aerospace, Land, and Sea Conference and Workshop & Exhibit, San Diego, California – Sept. 15-18, 2003.
- SPACE 2003, Long Beach, California – Sept. 23-25, 2003.
- AIAA’s 3rd Annual Aviation Technology, Integration, and Operations (ATIO) Technical Forum, Denver, Colorado – Nov. 17-19, 2003.

- AIAA 3rd Biennial National Forum on Weapon System Effectiveness, Seal Beach, California – Nov. 18-20, 2003.
- 42nd AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada – Jan. 4-7, 2003.

Additional details may be found on the national AIAA website at <http://www.aiaa.org/calendar>.



**American Institute of
Aeronautics & Astronautics
San Francisco Section**

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*Thursday, September 25, 2003 Ramada Inn, Sunnyvale, CA
Evidence of ET Intelligence*