



THE SPACE EXPLORER

THE NEWSLETTER OF THE ASSOCIATION OF SPACE EXPLORERS • USA JULY 2000

Date, Agenda Set for 16th Planetary Congress

The 16th Planetary Congress of the Association of Space Explorers has been rescheduled for November 13-17, 2000. Originally scheduled for October, the change was made to accommodate the participation of members of the Spanish Royal Family in Congress activities. The Congress will open in Madrid, Spain; mid-week, the delegations will travel to the sea-side city of Valencia where the remainder of the Congress activities will take place. The 16th Congress will be co-hosted by US astronaut Michael Lopez-Alegria and Spanish flier Pedro Duque.

While the theme of the Congress is as yet undetermined, seven technical sessions will be devoted to the International Space Station, crew safety, the MIR space station, commercial aspects of space exploration and utilization and future projects. The Association is also exploring the possibility of webcasting, for the first time, Congress activities and providing opportunities for fliers to participate in real-time internet discussions with students worldwide.

Also planned is the inauguration of an ASE Lifetime Achievement Award, which will be presented to an individual "who has made significant, outstanding and lasting contributions in support of human spaceflight and exploration."

ASE-USA Membership Growth Continues

Since January, membership in ASE-USA has grown by 15% to a total of 139 flown US personnel, exceeding our goal of increasing membership by 10% over the course of the calendar year. This growth represents the largest one-year gain in individual memberships since

1991; a significant percentage of ASE-USA's new members are currently active in the Astronaut Corps.

Overall, international membership in ASE now comprises 281 of the 392 flown astronauts and cosmonauts world-wide.

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Executive Director's Report by Andy Turnage

Greetings. Here we are in July, coming up rapidly on August, and my deadline for finishing this newsletter has long since passed. This edition was originally planned for June; now, it looks like I'll finally get it out the door in August. Producing these newsletters is, for me, one of the least pleasurable items on my "to do" list; year after year, I tell myself "OK, we'll get this thing out quarterly," and year after year, I close out the year with "OK, well, I guess three isn't so bad..."

The suggestion has been made that since we now have a functioning web site (<http://www.space-explorers.org>) and many of you receive the weekly updates on-line, perhaps a newsletter isn't necessary: a fine suggestion indeed! But, until *everyone* in the organization is on-line, I suppose I'll just have to grin and bear it.

I thought it might be interesting to have some of you contribute occasional material for the newsletter. This would certainly enable me to put them out more frequently, and it might provide a forum to share ideas, experiences or opinions among the membership. If you would be interested in contributing a postflight report, flight experiences/lessons learned or other technical issues, or

perhaps writing an editorial on some issue that concerns the spaceflight community, please feel free to submit them to me. I can *assure* you that they'll be used.

In the last newsletter, Bo Bobko reported on the financial health of the organization. I thought I would update you on the results from the last fiscal year (ended June 30) and some of the plans that we have for this year and next. As many of you know, we completed fiscal year 2000 just over \$18,000 in the black, and we are projecting a similar result in the current fiscal year. This is in large part due to the time and energy invested on behalf of the organization by our Board of Directors, the very generous contributions on the part of our Corporate Members and financial contributions by our individual members.

After four years of fiscal austerity, we are finally reestablishing the financial health of the ASE. The organization's assets are now twice what they were just two years ago. We hope to continue this positive trend in the coming years.

Programmatically, we have several new initiatives that we are currently working on. Be-

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Please send all correspondence to:

ASE-USA
1150 Gemini Ave.
Houston, TX 77058

ASE-USA Welcomes New Members

Ken Bowersox
 *Jay Buckey, Jr.
 Kalpana Chawla
 Cady Coleman
 Brian Duffy
 C. Michael Foale

Steve Hawley
 Janet Kavandi
 Scott Kelly
 Kevin Kregel
 Gregory Linteris
 Michael Lopez-Alegria

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 * Life Member

As of July 1, 2000...

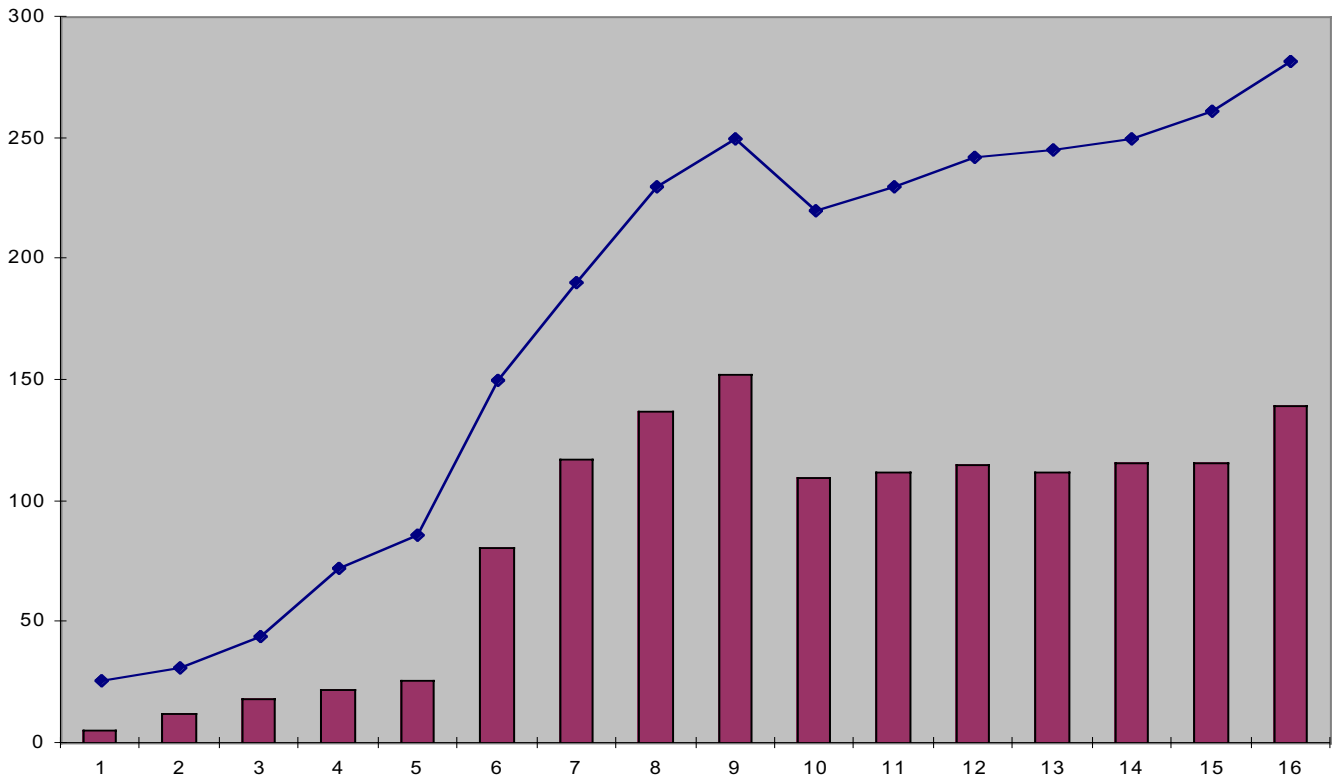
QUICK

392 people have flown in space...
 Of these, 282 are members of ASE (72% of the world-wide total),
 245 are Americans; of these, 139 are members of ASE-USA (57% of the US total)

STAT

**ASE Membership Growth Profile
 (16 year history)**

US ◆ Worldwide



**Peterson to Represent ASE at
AIAA Space 2000
Conference and Exposition**

Don Peterson will represent the ASE International Standing Committee on Crew Safety and Technology Development at the AIAA Space 2000 Conference and Exposition in Long Beach, California. Peterson will present "Safety Concepts for a Crewed Mars Mission" at a conference session focusing on human exploration beyond low earth orbit.

The paper will present safety concepts associated with Functional Verification Of Dormant Systems, Failure Detection In Non-Dynamic Items, Failure Prediction, Optimal ORU Partitioning, In-Flight Vehicle/Systems Reconfigurability, EVA Safety/Recovery Provisions, and Enhanced Safe Haven/Rescue Capability.

**Acton Awarded 2000
Hale Prize**

ASE founding member Loren Acton is the winner of the 2000 Hale Prize. The Solar Physics Division of the American Astronomical Society sponsors, with the cooperation of the American Astronomical Society, an Honorary Prize in memory of George Ellery Hale, awarded to a scientist for outstanding contributions to the field of solar astronomy.

In considering candidates, the Hale Prize Nominating Committee is guided by the impact of the candidate's research in solar physics, general astronomy, geophysics, mathematics, and physics. For more information, visit <http://solar.physics.montana.edu>.

Report

(cont'd from page 2)

ginning in Fall, 2000, we will inaugurate a partnership with the JSC Distance Learning Center to host a monthly series of "virtual classroom appearances." The program will allow ASE members to visit up to four schools simultaneously, via video-teleconference, to promote student interest in science, mathematics and engineering. We are exploring the possibility of establishing, in cooperation with the Challenger Center, a network of student space explorer affiliates. This would enhance ASE's outreach capabilities and allow the Challenger Center to benefit from greater exposure to ASE members and resources.

Needless to say, we need you get involved. As a membership organization, we can't be very effective without the participation of our members. Participate on one of the committees, make an educational appearance on ASE's behalf, attend a Congress, provide educational materials for the web site, run for the Board of Directors, write a piece for the newsletter, provide us with occasional feedback on what kind of programs you think would benefit our mission, recruit a new member; these are all ways in which you can participate! If everyone contributed two or three hours of their time per *year*, we'd be in great shape.

That said, I hope to see you at our upcoming Longitudinal Health Study TIM (Monday, August 14 at from 5-7 pm in the JSC Gilruth Center Dining Room), at the Astronaut Reunion on August 25, or at the 16th Congress in Madrid. Thanks, as always, for your membership and support, and hope to see you soon. I wish you all clear skies, tail winds and soft landings!

ASE-USA Welcomes New Corporate Members

Lockheed Martin Space Operations

Headquartered in Houston, Texas, USA, Lockheed Martin Space Operations (LMSO) is a high-technology company specializing in government, commercial, and space-related support services that bring low-price, one-stop shopping in the following core competencies: Project Management; Systems Engineering and Integration; Earth, Space, and Life Sciences; Software Development and Information Technology; and On-site Operational Support Services. LMSO employees and subcontractors total more than 7,800 engineers, scientists, systems analysts, technicians, and support personnel at eight National Aeronautics and Space Administration (NASA) centers, National Oceanic and Atmospheric Administration (NOAA) stations, and other locations across the country. Lockheed Martin's key businesses include: CONSOLIDATED SPACE OPERATIONS CONTRACT (CSOC); SCIENCE, ENGINEERING, ANALYSIS AND TEST (SEAT) OPERATION; MISSION ENGINEERING & GROUND OPERATIONS; SYSTEMS DEVELOPMENT & INTEGRATION OPERATION

Kennedy Space Center Visitor Complex

Kennedy Space Center Visitor Complex is dedicated to telling the NASA story and inspiring all people to support the exploration of space. In early 2000, the Visitor Complex finished a \$130 million expansion, adding new attractions and interactive experiences. The Visitor Complex is the only place on earth where guests can now meet face-to-face with an astronaut every day of the year at the NEW Astronaut Encounter. Visitors can also experience the Visitor Complex's newest attractions. Early Space Exploration, displaying NASA's original Mission Control room and relive the era of Mercury and Gemini; and Exploration the New Millennium, a futuristic exhibit showcasing the next thousand years of space exploration and housing an actual piece of Mars.

The Kennedy Space Center tour takes guests out to Launch Complex 39 Observation Gantry, just one mile away from the Space Shuttle launch pads; the Apollo/Saturn V Center, complete with a 363-ft moon rocket and interactive theater shows; and real space station modules as well as walk through exhibits at the International Space Station Center. For more information call 321/452-2121 or visit the, on the internet at <http://www.KennedySpaceCenter.com>

Scholarship to Benefit NASA Dependents

A new scholarship program has been developed to benefit the family members of NASA employees. The Space Shuttle Children's Fund will pay up to \$14,000 per year for undergraduate work and can be extended to include graduate studies. Funds can be used to cover tuition, books, medical and living expenses. The scholarship is available to the children of deceased NASA employees (the employee need not have been an astronaut), and there is no limit to the number of children supported under the program. For more information contact Arlene Milligan at (202) 624 5523.

2000 Astronaut Reunion

The semi-annual Astronaut Reunion is scheduled for Friday, August 25, 2000. Included on the agenda are technical briefings in the morning, with the continuation of selected topics in the afternoon and a Blue Ribbon Panel, as was done in 1998.

Accommodations for the Reunion have been reserved at the South Shore Harbour Resort (20 rooms) as well as the ballroom for Dinner. Clear Lake Charters provides complimentary airport pickup from Hobby to South Shore Harbour Resort but requires prior coordination. They can be reached directly at (281) 334-4858 or through the front desk via (281) 334-1000, ext. 2143.

Program

0900	<i>Opening Remarks</i>	Jim Wetherbee, Charlie Precourt	Bldg.4S/Rm. 6600
0930-1100	<i>Technical Briefings</i>		
	Shuttle Cockpit Upgrades	Steve Lindsey	Bldg. 4S/Rm. 6600
	ISS Expedition Corps	Mike Foale	
	Decadel Planning (Moon & Mars)	Don Pettit	
1130-1300	<i>ASE Luncheon</i> (Please RSVP)		Villa Capri
1400-1600	<i>Continuation of Technical Briefings & Blue Ribbon Panel</i>		
1800	<i>Cocktails</i>		South Shore Harbor Hotel Ballroom
1930	<i>Dinner</i>		SSHH Ballroom

**16th ASE Planetary Congress
Madrid, Spain
November 13-17, 2000**

Monday	0900 1000-1130	Breakfast Opening Ceremony Welcome by the Host (Pedro Duque) Remarks by ASE President
	1200-1300 1400-1600 1630-1930 2130-2300	Press Conference Lunch Technical Session # 1 (Closed) Crew Safety Dinner
Tuesday	0900-1000 1000-1300 1400-1600 1630-1930 2130-2300	Breakfast Technical Session # 2 (Open) ISS (#1)-US Assembly Flights, FGB/SM, Increment Plans Lunch Technical Session # 3 (Open) ISS (#2)-Partner Contributions Dinner
Wednesday	0900-1000 1000-1300 1400-1600 1630-1900 1900-2030 2130-2300	Breakfast Technical Session # 4 (Open) Mir Space Station Lunch Executive Session (Closed) Poster Signing Dinner
Thursday	0800-0900 0900-1300 1400-1600 2130-2300	Breakfast Depart for Valencia Lunch Dinner
Friday	0900-1000 1000-1300 1400-1600 1600-1930 2130-2300	Breakfast Technical Session # 5 (Open) Space Exploration as a Driver of New Technology Lunch Technical Session # 6 (Open) Future Projects Closing Banquet and Award Ceremony
Saturday		Depart from Valencia

For the most up-to-date information on the Congress program, please visit the ASE web site at <http://www.space-explorers.org>

The ASE International Committee on Crew Safety and Technology Development will hold its third annual forum at the XVI ASE Planetary Congress which will take place November 13-17, 2000 in Madrid, Spain. The focus of this session will be the identification and discussion of issues specifically relating to crew safety. The purpose of this call for papers is to provide prospective authors with background on the committee and information on the types of papers that would be most useful to the Committee's purposes.

Committee Objectives:

- a. Identify the factors that will be critical to the safety and health of human crews on extended stays in space, along with ingenious and revolutionary solutions for overcoming potential obstacles;
- b. Identify promising advanced technologies that will enable practical human exploration of the solar system and make recommendations for development and implementation;
- c. Promote and assist in the international standardization of space flight design and operational requirements with an emphasis on crew safety.

Committee Strategy:

The International Committee on Crew Safety and Technology Development will employ a risk management approach to working its focus areas. This involves the identification of safety risks; the analysis of risks, including assessing probability, impact/severity and time frame in which action should be taken; and planning the mitigation of risks. The Committee's deliberations will always attempt to cover the full range of solutions made possible by existing and expected human space flight technology.

Papers Desired:

Papers should fit the specific objectives of the committee and should employ a risk management approach as described under "Committee Strategy". Papers should attempt to identify, analyze and recommend mitigation plans for resolution of crew safety risk issues. Presentations should be tailored for 15-20 minutes, with 10-15 minutes for questions and discussion.

Submission of Abstracts:

Please submit a summary (approx. 500 words) of your proposed paper to:

Frederick D. Gregory, Chair
NASA HQ, Code Q
300 E St., SW
Washington, DC 20546

Phone: 202 358 2406
Fax: 202 358 2699
E-mail: fgregory@hq.nasa.gov

Abstracts are due by September 1, 2000

Specific topics desired for the Crew Safety session can include but are not limited to:

Low Earth Orbit Plasma/Electrical Interaction with High Voltage Spacecraft

-High voltage spacecraft can generate a spacecraft/plasma electrical interaction with the potential for arcing and sputtering that can have deleterious effects. Address mitigation technologies.

Long-Term Noise Effects on Space Travelers

-Address issues of short and long duration noise that may have long term physical, psychological, and physiological effects on space travelers.

Micrometeoroid and Space Debris Penetration Solutions

-On-orbit techniques needed to repair penetrations due to micrometeoroids and space debris.

Radiation Protection for Manned Volumes

-With the increase in solar activity, radiation protection inside human tended vehicles is becoming more important. Shielding methods need to improve to assure long-term safety.

On-Orbit Quality

-Human-tended spacecraft are living well past their original design life. An approach is needed to assure systems are maintained and preserved during the harsh exposure to the on-orbit environment. Address an approach, techniques and methods to assure the on-orbit quality of human tended spacecraft.

Laser Initiated Pyrotechnic Devices

-Address the ability to assure the effective use of laser initiated pyrotechnic devices.

Technologies for control of microorganisms in fluid lines while remaining compatible with human-tended spacecraft

-Uncontrolled microbial growth can have adverse effects on membrane performance and biofoul surfaces. Toxic chemicals could have an adverse on crew if accidentally released. Address preventive, control and corrective technologies.

Fault Tree Modeling Techniques for Complex Computer Based Systems

-Define modeling techniques that can address static and dynamic events and can be applied to hardware, software and human application

Technologies for Detection of Fire and Toxic Substances

-Identification of advanced technologies that could be used in the detection of fire and toxic substances

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Houston, TX 77058
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