



THE SPACE EXPLORER

THE NEWSLETTER OF THE ASSOCIATION OF SPACE EXPLORERS • USA JUNE 1997

Space Technology For Sustainable Development

Theme and Program Set for XIII ASE Planetary Congress

The international Association of Space Explorers' (ASE) XIII Annual Planetary Congress will be held September 12-19, 1997 in San José, Costa Rica. Hosted by astronaut Franklin Chang-Diaz, the theme of the Congress will be "Space Technology for Sustainable Development," reflecting the Association's belief that space technologies can and should be utilized to monitor and characterize the impact of human development on the environment.

Costa Rica, as a participant of and signatory to the UN Commission on Sustainable Development's Agenda 21 program on environmental stewardship, was selected as the XIII Congress site because of its efforts to sustain economic development while implementing stringent policies to protect biodiversity and non-renewable resources. At least one technical session at the Congress will be dedicated to the discussion of how space technology can enhance the efforts of countries like Costa Rica to promote sustainable development.

In addition to activities in San José and surrounding areas, the delegations will visit the EARTH (Escuela Agricultura de la Region Tropicale Humeda) College. There, students from Latin and South America (particularly the tropical regions) follow a curriculum designed to teach farming techniques with an emphasis on mitigating the effects of agricultural development and production on the rain-forests, rivers, oceans and other environmentally sensitive areas.

ASE and BIBO TV To Undertake TV Series

The Association of Space Explorers (ASE) and German television producer Werner Bibo (BIBO TV) are negotiating ASE participation in the production of a TV documentary entitled "Inside Outer Space--The Human Dimension." The six-part series will be produced separately for the US and European markets, with possible adaptation into languages other than the planned English and German. A book, soundtrack CD and other memorabilia are expected to accompany the start of the series.

The documentary is to be co-hosted by astronauts and well-known television celebrities. It will introduce audiences to the most exclusive society in the world, the Asso
see BIBO TV pg. 9

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President's Report by Jon McBride

First of all, I would certainly like to thank Dick Covey for leading this fine organization for the past two years--it is nice to know that his experience and expertise will remain with us on the Board of Directors. Second, I thank the membership for electing me to the board, and the board for electing me president. As many of you know, my involvement with ASE has been one of the most rewarding experiences of my life and like many of you, I have had a lot of experiences to choose from.

Since becoming an active member in 1989 and attending all subsequent annual congresses and a majority of the executive committee meetings, I have had the pleasure to watch our organization grow in numbers and become more and more of a voice in international space strategic planning, cooperation and protocol. I personally do not think that we would be doing the great things that we are doing today had our founders not taken some bold, and then highly controversial, steps forward back in 1985. We owe them our thanks!!

That's the good part. The other side of the coin is that we (ASE) have just barely skimmed the surface of our potential. Most of us have championed the fact that

there is probably no other organization with as much force, energy, leadership/management skills and experience that could be utilized in so many ways. We need only to figure out how best to focus this energy and potential.

As you read through this newsletter, you will see several initiatives that Andy Turnage and I (most of the credit goes to Andy--we're lucky to have him, folks!!) are working on. As with any business or organization, you need capital to function--with ample capitalization and good management we should be able to realize our goals and mission objectives.

In conclusion, let me say that that will be my primary objective--to properly capitalize our group. Each of you can help by generating corporate memberships, doing an occasional speaking engagement on our behalf and of course by maintaining your memberships. But the best thing you can do is to participate. If you haven't been to an annual congress, we have an excellent opportunity on the horizon--Costa Rica from 12-19 September. Hope to see you there.

P.S. Andy and I (and the rest of the board) would of course welcome any and all suggestions that you might have to advance the ASE mission.

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NW, Washington, DC 20006

Space Walk from the MIR Space Station

by Col. John Blaha

STS 29, STS 33, STS 43, STS 58

MIR 22

In January, John Blaha returned from the Mir space station after spending 4 months on orbit. While on-orbit, Blaha completed a demanding science program and supported two space walks by the resident cosmonauts. The following is an account of two EVAs performed in December of 1996.

In December the Mir 22 crew prepared for and performed two space walks. Valeri [Korzun] and Sasha [Kaleri] walked in space while I remained inside the Mir station. The goal of the first space walk was to disconnect electrical cables from an eleven year old solar panel on the base block; then to connect these power cables to an extension cable; then to connect the other end of the extension cable to a new solar panel on the KVANT 1 module. The eleven year old solar panel had lost a lot of efficiency. The goal of the second space walk was to place a new antenna on the end of the KRYSTALL module. This antenna would allow rendezvous with a Progress or Soyuz vehicle without having to maneuver the Mir station to a

special rendezvous attitude.

I will forever retain the images of Valeri and Sasha working 18 hour days in preparation for the space walks, asking many questions of the specialists on Earth, probing every possible scenario. I will never forget the incredible views of these two cosmonauts floating in space, silhouetted against the blackness of space, with planet Earth rotating by below us. I will always remember the sounds of strain in their breathing when the workload was intense. And finally, I will never forget the incredible feeling of accomplishment after the job was complete and everyone was safely back inside the Mir station.

Four days prior to the spacewalks we started preparing, rehearsing and verifying all of our procedures and actions. Valeri and Sasha spent a lot of time in the airlock located in the KVANT 2 module. I spent time in the base block, Soyuz capsule, KVANT and KVANT 2 reviewing computer displays, switches, panels, checklists, etc. that I would use during the space walk. I also prepared 2 video cameras and

one 35 mm camera that I would use to document the activities of Valeri and Sasha. I thought about where Valeri and Sasha would be located at various times throughout the space walk, and planned which windows would be best to obtain good photography. I also spent some time thinking through my actions in case there was a malfunction with any of the life support systems of the Mir, a fire, or an atmosphere leak. When the day of the space walk arrived we were all very confident and prepared.

Valeri and Sasha entered the airlock, closed the hatch, donned their suits, depressurized the airlock and opened the outer hatch. They then used a pole (the Russians call this system Strela [ed: the arrow]) to transport themselves from the end of the KVANT module to the base block. After reaching the base block, they began the difficult task of locating the correct connectors, disconnecting power lines and connecting the extension cord. Then they took

*see **Spacewalk** pg. 10*

**Check Out ASE's WWW Home Page at
<http://explorer.csc.com/ASE/ASE.html>**

New ASE-USA Corporate Members

SpaceVest

President & General Partner: John Higginbotham
 11911 Freedom Drive, Suite 580
 Reston, VA 22090
 (703) 904 9800; (703) 904 0571 (fax)
<http://www.spacevest.com>

Spacevest is an equity capital organization that brings a focused investment approach to companies which supply, support, or depend on space-related activities. This encompasses a broad array of applications including wireless telecommunications, local loop telephony, positioning systems, geographical information systems, telemedicine, security systems, software tools and many other emerging growth opportunities.

Thiokol Aerospace Group

President : Robert L. Crippen
 9160 North Highway 83
 Promontory, UT 84302-0707
 (801) 863 2660; (801) 863 3112 (fax)

Thiokol Corporation is the nation's leading supplier of solid rocket propulsion for space launch vehicles. Thiokol produces the Space Shuttle Solid Rocket Motors, STAR™ series of satellite placement motors, CASTOR 120 ® solid rocket motors for expendable launch vehicles, the CASTOR® IV series of solid rocket motors as well as precision fastening systems for space systems.

United Space Alliance

President & CEO: Kent Black
 600 Gemini Ave.
 Houston, TX 77059
 (281) 282 6725; (281) 282 3532 (fax)

United Space Alliance (USA) is the single prime contractor for NASA's Space Shuttle Operations. USA currently manages approximately one-third of NASA's \$3.2 billion annual Shuttle budget. USA's mission is to be recognized as the premier launch and flight operations service provider in the world. United Space Alliance, LLC, headquartered in Houston, is a Boeing/Lockheed Martin joint venture formed to conduct the Space Flight Operations Contract for NASA.

Life Memberships Surge

ASE-USA Life Memberships have increased by over 100% since July, 1996. We would like to thank all of those who have become Life Members of ASE-USA as of June 1, 1997:

- Loren Acton*
- Buzz Aldrin*
- Joe Allen*
- James Bagian*
- JD Bartoe*
- Gene Cernan*
- Mary Cleave*
- Mike Coats*
- Pete Conrad*
- Dick Covey*
- Bob Crippen*
- Bonnie Dunbar*
- John Fabian*
- Jake Garn*
- Owen Garriott*
- Rick Hauck*
- Susan Helms*
- Jeff Hoffman*
- Fred Leslie*
- Jack Lousma*
- Jon McBride*
- Mike Mullane*
- Ellen Ochoa*
- Ron Parise*
- Ken Reightler*
- Jerry Ross*
- Mario Runco, Jr*
- Albert Sacco, Jr*
- Tom Stafford*
- Pierre Thuot*
- Dick Truly*
- James van Hoften*
- Janice Voss*
- Charlie Walker*
- Dave Walker*
- Don Williams*

ASE and United States Space Foundation to Cooperate on Broad Range of Activities

The Association of Space Explorers (ASE) and the United States Space Foundation (USSF) will cooperate on a broad range of activities with a focus on ASE participation at the annual USSF National Space Symposium in Colorado Springs. As planned, ASE will organize and host a dedicated session on human space flight and exploration in conjunction with the annual symposium.

At the most recent National Space Symposium, held April 2-4 in Colorado Springs, Colorado, the association held an invitation-only luncheon (sponsored by McDonnell Douglas Corporation) and was introduced to a select group of aerospace industry leaders. During the week, ASE members Buzz Aldrin, Vance Brand, Dick Covey, Bonnie Dunbar, Jon McBride, Bruce McCandless and Ron Sega participated in support of several symposium sessions and activities.

In the development stages are plans for a joint ASE-USSF annual astronaut and celebrity invitational golf tournament, tentatively planned to be held in the Spring at the Broadmoor Hotel in Colorado Springs. The event is envisioned as a fund-raising activity to support the operations of ASE and USSF. Also being considered is an annual global conference on space, co-hosted by ASE and USSF, to be held in conjunction with the annual ASE planetary congresses. The inaugural event is tentatively planned to be held in 1998 in Washington, DC.

ASE Becomes Mission Home Affiliate

Washington, DC--The Association of Space Explorers has become part of the Mission Home national space awareness program as a Mission Home Affiliate organization. The affiliation was made in mid-April, according to Andy Turnage, Executive Director of ASE.

Mission Home, based in Colorado Springs, CO, is a national public awareness program of the Space Awareness Alliance (SAA), which is an association of aerospace companies and such organizations as the US Space Foundation and National Space Society. According to Turnage, the affiliation will be beneficial to both ASE and USSF, who share the belief that US space endeavors are important and deserving of public support.

At the same time, ASE's membership in Mission Home will allow it to advance its mission of public awareness of and support for space exploration. By working with Mission Home, ASE can help strengthen Mission Home's support for space exploration and development, while advancing its own scientific and environmental education objectives.

Mission Home Program Director Sarah Hoyt said that having such a prestigious organization such as ASE as an affiliate member will enable Mission Home to further encourage the public to "Take Up Space!". "Space is relevant to everyday life," Hoyt said, "and everybody should be interested."

International Standing Committees to Coordinate Congress Technical Sessions

Pending approval of the international executive committee, the ASE international standing committees will henceforth take responsibility for planning and organizing the technical sessions at the annual congresses. The goal of this policy is threefold: to enhance the technical content and proceedings of the various congress sessions; to focus and facilitate the work of the standing committees with respect to the congresses; and to promote membership in the committees by implementing an on-going program of activities and projects.

In preparation for the upcoming Thirteenth Congress in Costa Rica, the International Committee on Crew Safety & Technology Development, co-chaired by Fred Gregory and Vladimir Kovolyonok, will solicit and review presentations for the sessions on Crew Safety and Technical Issues and Space Research and Applications. The International Committee on Ecology, co-chaired by Mario Runco, Jr. and Pavel Popovich and in cooperation with congress host Franklin Chang-Diaz, will coordinate the session on Ecology and Sustainable Development.

A major focus of both committees' plans for the Thirteenth Congress will be to generate member discussion and input on committee program development, management and implementation. It is envisioned that the committees will produce technical proceedings and recommendations that will be made available for publication and distribution at relevant international conferences and symposia.

ASE International Standing Committees

Policy, Liaison & Public Relations	Crew Safety & Technology Development	Ecology	Development & Financial Support
Dorin Prunariu, Chair Bob Cenker Ed Gibson Yuri Glazkov Pyotr Klimuk* Vladimir Kovolyonok Alexei Leonov Byron Lichtenberg Vladimir Remek* Helen Sharman Valentina Tereshkova Taylor Wang	Fred Gregory, Chair Roy Bridges Jr. Henry Hartsfield Jr. Vladimir Kovolyonok Bruce McCandless II Ernst Messerschmid Steve Nagel Don Peterson Alexander Poleshchuk * Subcommittee on History and Archives	Pavel Popovich, Chair Toyohiro Akiyama Alexander Alexandrov (Bul.) Mary Cleave Sam Durrance Bertalan Farkas Dirk Frimout Yuri Glazkov Alexander Ivanchenkov Bruce McCandless II Ernst Messerschmid	Jon McBride, Chair Rick Hieb Bill Nelson Vladimir Vasyutin Don Williams Vladimir Remek Mario Runco Viktor Savinykh Vitaly Sevastyanov

Members wishing to participate in committee activities should contact the office in Washington or the respective committee chairs.

Call For Papers

ASE's International Committee on Crew Safety and Technology Development will hold its first meeting at the XIII Planetary Congress which will take place September 12-19, 1997 in San José, Costa Rica. A major highlight of this first meeting will be the presentation of a number of papers intended to provide ideas and direction as the committee begins its work. 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 purpose.

Committee Goals:

The Committee's primary goals are to facilitate the safe exploration and settlement of the solar system; the achievement of safe, routine space travel; and the enrichment of life on Earth through people living and working safely in space.

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 propulsion and life support systems 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 which affect crew safety.

Committee Strategy:

The International Committee on Crew Safety and Technology Development will employ a broad spectrum approach to working its focus areas. The Committee's deliberations, both internal and those involving the public, 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 broad goals of the Committee, or one or more of its specific objectives and should employ the "broad spectrum" approach described under "Committee Strategy." Papers should be tailored for presentation in 20-25 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
 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 July 18, 1997

As part of your abstract, please indicate how your paper will satisfy the requirements as described under "Papers Desired."

**13th Planetary Congress
Preliminary Program**

Friday, September 12

0800-2000 Arrival of Delegations
& Check-in

Saturday, September 13

0730-0830 Breakfast
0900-1000 **Opening Ceremony**
@ El Teatro Nacional
1000-1100 Press Conference
1100-1200 Industry & Tourism Presentations
1200-1400 Lunch
1400-1800 **Session #1**
International Space Programs Review
1900-2100 Welcome Dinner @ Pueblo Antigua

Sunday, September 14

0700-0800 Breakfast
0900-1000 Visit to Café Britt
1000-1200 Visit Poas Volcano
1200-1400 Lunch in Sarchí
1400-1600 Visit craft factories (Sarchí)
1900-2100 Dinner

Monday, September 15

0700-0830 Breakfast
0900-1030 Independence Day Parade
@ Plaza de la Democracia
1030-1200 Visit gardens at Museo Nacional
1200-1330 Lunch
1400-1800 **Session # 2**
Crew Safety & Technical Issues
1900-2100 Dinner

Tuesday, September 16

0730-0830 Breakfast
0900-1100 **Session # 3**
Theme Session & Award Ceremony
1100-1200 Group Photo
1200-1300 Lunch
1400-1600 **Session # 4**
Space Research & Applications
1630-1800 Poster Signing
1800-1930 Dinner
2000-2100 Dance Performance at Teatro
Nacional

Wednesday, September 17

0800-0900 Breakfast & Drive to EARTH
0900-1030 EARTH Campus/Rainforest Tour
1030-1130 Tree Planting Ceremony
1200-1300 Lunch with Students and Faculty
1300-1500 **Session #5 (at EARTH)**
Ecology & Sustainable Development
1500-1600 Community Day Activities
1600-1700 Return to San José
1900-2000 Dinner
2000-2200 Casino

Thursday, September 18

0730-0900 Breakfast
0900-1100 Executive Session
1100-1330 Lunch/Community activities
1330-1700 Science Fair Visit
1900-2130 Closing Ceremony & Banquet

Friday, September 19

0730-0900 Breakfast
0900-1800 Departures

**ASE XIV Congress
October 19-24, 1998
Brussels, Belgium**

The XIV Planetary Congress of the Association of Space Explorers is currently slated to be held October 19-24, 1998 in Brussels, Belgium. The Congress will be hosted by astronaut Dr. Dirk Frimout in cooperation with the Euro Space Foundation. The tentative theme of the Congress is "Space and Education--A Message to the Youth." Congress activities will take place in Brussels as well as at the Euro Space Center Belgium in Transinne.

Planned congress activities include a reception by the King of Belgium at the Royal Palace, working sessions focussing on the theme and selected technical issues, community day activities, and visits to various scientific and educational institutes in Belgium as well as historical sites in Brussels and its environs. The congress will culminate in a gala dinner at Space Camp Belgium.

Potential sponsors of the XIV Congress include the European Space Agency (ESA), the European Commission, the Belgian regional and federal Ministries of Technology and Science as well as other selected Belgian and European aerospace companies and institutes.

***The Greatest Adventure* Publisher Charles Pierson
in Liquidation, Contract Terminated**

In a fitting end to a long tale of deception and mismanagement, it was determined recently that the publisher of ASE's second book *The Greatest Adventure* is in liquidation and is unable to pay ASE over \$20,000 in royalties owed on sales of the book.

Charles Pierson Publishing was contracted in 1991 to coordinate production and printing of the book for ASE. Overcost and behind schedule, the book was brought to market with little fanfare and an underwhelming promotional effort. Ultimately, the book failed to meet its expected sales potential and a significant number of orders were cancelled or returned by booksellers world-wide.

Following more than a year of unsuccessful attempts to contact Pierson by both ASE and *The Greatest Adventure* editor Ed Gibson, legal counsel was retained Down Under to ascertain the whereabouts of Charles Pierson and determine the status of the royalties owed ASE and Gibson. It was reported by said

legal counsel that Pierson Publishing is in liquidation and in fact has been (unknownst to ASE) since 1991, prior to signing the contract for the book. While the disposition of Pierson Publishing's assets and the whereabouts of Pierson himself are in question (the court documents list Pierson Publishing's total assets as " one wooden desk, one chair, one fax"), ASE has terminated the publishing contract with Pierson and retains copyrights to the book. The association is presently engaged in legal action against Pierson to assure the return to ASE of all photos, proofs, galleys, films and other material used in the printing of the book.

BIBO TV
cont'd from pg. 1

ciation of Space Explorers, and will tell the stories of those who pioneered, as well as those who continue to explore, the last great frontier. The first episode will open with a dramatic depiction of the transfer of Werner von Braun to Allied lines in 1945 and will describe the role he played in the genesis of the Space Age. Subsequent episodes will describe the heroism and drama of human space exploration through the personal accounts of the astronauts and cosmonauts, with exclusive insights into the archives of both NASA and the Russian Space Agency. The project will represent a significant revenue-generating opportunity for ASE and participating fliers.

Spacewalk

cont'd from pg. 3

the new solar panels that had been installed in May. I was able to film this activity through a small (12 inch diameter) window in the KRYSTALL. I also had installed an extension cord to my communications equipment so that I could talk with them and with the Russian Control Center. Every now and then I would go to the base block and enter commands into the computer or recover information needed by the control center.

Valeri and Sasha worked very hard on this space walk which lasted six hours. I was very proud of their hard work and attention to every detail. After they completed the space walk, we celebrated with lots of good food and conversation and downlinked the video to the control center in Moscow. We were all in a great mood. We later realized that during the space walk the connector to our amateur radio antenna had been inadvertently disconnected. No problem--we just added the reconnection of the antenna cable as a second task in the next space walk.

We prepared for the second space walk just like we had prepared for the first. On this excursion Sasha translated down the pole to the base block. Then Valeri climbed onto the pole and Sasha

moved it, and Valeri, across the open space to the end of the KRYSTALL module. I filmed all of this activity from a small, nine inch window inside Sasha's living compartment. Valeri then mounted the pole to the end of the KRYSTALL module and Sasha climbed across to join him. Four hours later they completed the difficult task of mounting this new antenna and connecting the electrical hookups to a panel on the outer surface of the KRYSTALL. This was difficult because they were working with very small screws and bolts, which are very difficult to manipulate inside a bulky space suit. I could tell by the tone of their voices that they were both very tired as they started to transfer back across the pole to the base block.

The amateur radio antenna was connected and I verified that we had good transmission and reception on the radio. Valeri and Sasha then climbed back onto the pole and slowly moved across to the airlock entrance on the end of the KVANT 2 module. They secured the hatch and repressurized the airlock. When they opened the hatch to the Mir and came back inside, the celebration started. We ended the day, and congratulated ourselves on a difficult job well-done with warm food, good drink, great music and a lot of incredible conversation.

Destiny International to Market ASE Congress Posters

The Association of Space Explorers (ASE) has agreed to a proposal by Destiny International, Inc. to market ASE's annual congress posters, as well as other ASE-related memorabilia, in the US and overseas.

Destiny International, based in Boca Raton, Florida, has previously worked with many former US astronauts to provide unique and high-quality autographed photos and prints to space memorabilia collectors. An agreement in principle was reached between ASE and Destiny to market the extremely rare and unique ASE annual Planetary Congress posters; the posters from each of the 12 congresses are numbered and have the original signatures of the astronauts and cosmonauts who attended that congress. It is estimated that only 30-40 of the original 150 posters from each congress remain.

Commemorative posters from past ASE congresses are available to individuals and organizations who contribute to the Association. Inquiries are welcome at the ASE-USA office in Washington, DC.

•••••
ASE Helmet Logo
Embroidered Polo Shirts
Available
 (202) 331 3885 for details
 •••••

Who's Where...	ISS News	1997 Shuttle Flights	On the Runway...
<p>Jay Apt named Director of the Carnegie Museum of Natural History in Pittsburg, PA.</p> <p>Pinky Nelson on sabbatical from the University of Washington, currently Deputy Director of Project 2061 K-12 Education and Science Reform Effort at the American Association for the Advancement of Science in Washington, DC.</p> <p>Dick Truly named Director of the National Renewable Energy Laboratory in Golden, CO.</p>	<p>Assembly EVA Assignments Announced</p> <hr/> <p>STS-88 7/9/98 US Node 1 Jerry Ross Jim Newman</p> <p>STS-92 1/99 Integrated Truss/Portable Mating Adapter Leroy Chiao Jeff Wisoff Michael Lopez-Alegria Bill MacArthur</p> <p>STS-97 3/99 Photovoltaic Module Joe Tanner Carlos Noriega</p> <p>STS-98 5/99 US Lab Module Mark Lee Tom Jones</p>	<p>STS-85 8/7/97 OV 103 PAD: A INC: 57.00 DEG ALT: 160 NM CRISTA-SPAS 02 MFD TAS 01 EH 02 11+1 days RMS</p> <p>Curtis Brown, CDR Jeff Ashby, PLT Jan Davis, MS Robert Curbeam, MS Steven Robinson, MS (R)</p> <p>STS-86 9/19/97 OV 104 PAD: A INC: 51.60 DEG ALT: 160 NM S/MM 07 SPACEHAB-DM 9+1 Days</p> <p>Jim Wetherbee, CDR Mike Bloomfield, PLT Scott Parazynski, MS Wendy Lawrence, MS (up) Jean Loup Chretien, MS Vladimir Titov, MS Michael Foale, MS (down)</p>	<p>STS-84 5/15-24/97 OV 104 PAD: A INC: 51.60 DEG ALT: 160 NM S/MM 06 SPACEHAB-DM 9+1 days ODS</p> <p>Charlie Precourt, CDR Eileen Collins, PLT Michael Foale, MS (up) Carlos Noriega, MS (R) Edward Lu, MS (R) Jean Francois Clervoy, MS Yelena Kondakova, MS Jerry Linenger, MS (down)</p>
<p>ASE-USA <i>New Members</i></p>			<p>On Orbit...</p> <p>MIR 23</p> <p>Vasili Tsibliev Alexander Lazutkin C. Michael Foale</p>
<p>Roger Crouch STS 83</p> <p>Tom Henricks STS 44, STS 55, STS 70, STS 78</p> <p>Kent Rominger STS 73, STS 80</p> <p>Rick Searfoss STS 58, STS 76</p>	<p>STS-99 6/99 Lab Outfitting/RMS Chris Hadfield Robert Curbeam</p> <p>STS-100 8/99 Joint Airlock / High Pressure Gas Assembly Mike Gernhardt James Reilly</p>	<p>STS 87 11/19/97 OV 102 PAD: B INC: 28.45 DEG ALT: 160 NM USMP 04 SPTN-201-04 16 Days EDO Pallet RMS</p> <p>Kevin Kregel, CDR Steve Lindsey, PLT Winston Scott, MS Kalpana Chawla, MS (R) Takao Doi, MS (R)</p>	<p>On the Pad...</p> <p>STS-94* 7/1/97 OV 102 PAD:A INC: 28.45 DEG ALT: 160 NM MSL-1 (R) OARE 16 Days EDO Pallet</p> <p>Jim Halsell, CDR Susan Still, PLT Janice Voss, MS Donald Thomas, MS Michael Gernhardt, MS Roger Crouch, PS Gregory Linteris, PS</p>
<p>Bold indicates ASE member</p>			<p>* STS 83 Re-flight</p>

Association of Space Explorers-USA
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