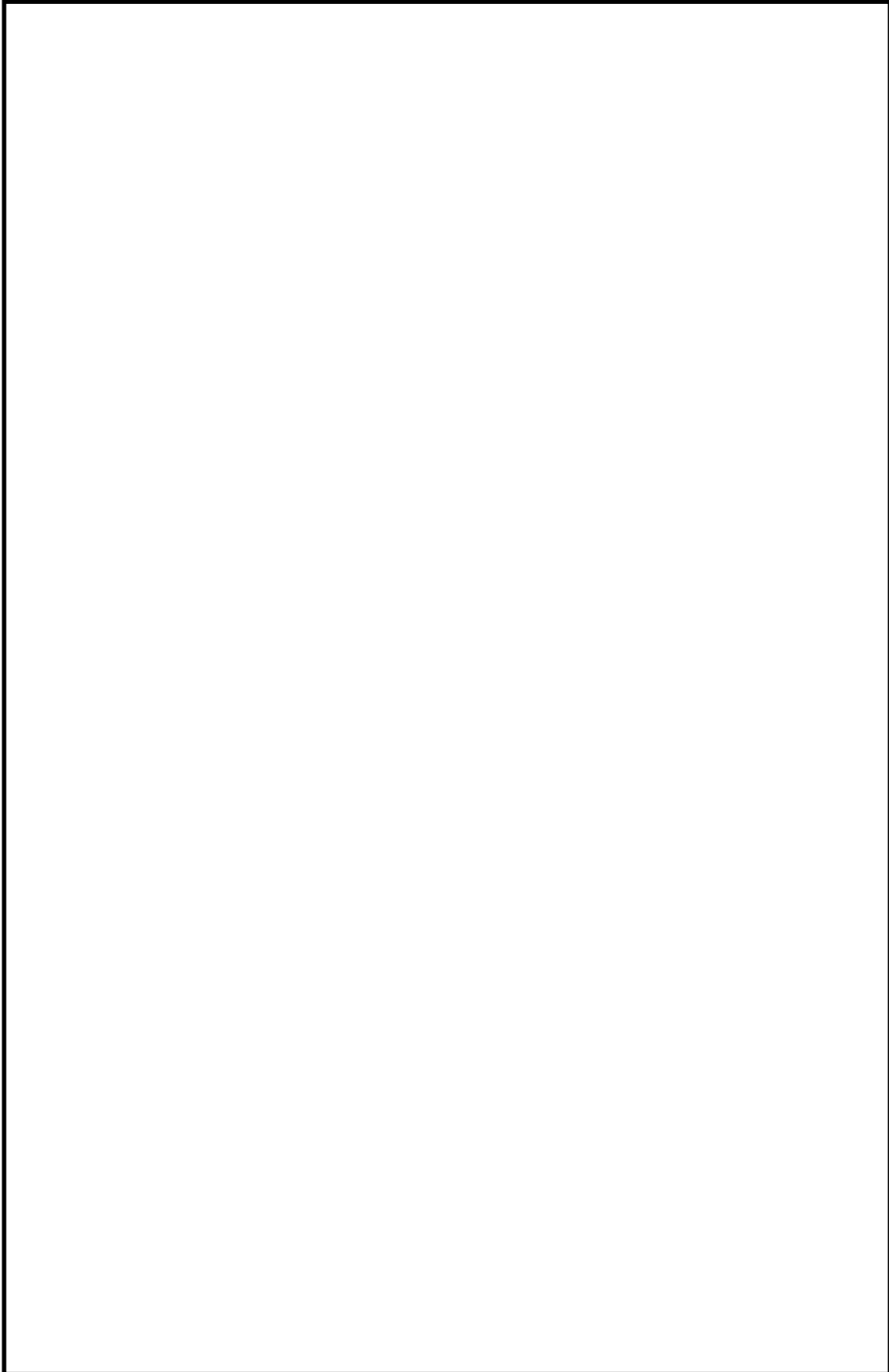


# Association of Space Explorers • USA



**Annual Report  
1998**

*The poster featured on the cover commemorates the 14th Planetary Congress of the Association of Space Explorers (ASE). The Congress took place October 19-23, 1998 in Brussels, Belgium. Bearing the authentic signatures of seventy-two of the participating astronauts from eighteen nations, it is part of a series of limited collector's edition posters that have been produced and signed at each ASE Congress since the Association was founded in 1985. One hundred forty-seven posters were signed at the 14th Congress.*

*The poster has two headings, the main heading in English at the top, with the Russian displayed at the bottom. Around the periphery are printed translations of "Association of Space Explorers" in the native languages of all individuals who have flown in space. Clockwise, from upper left with English at the top, they include Romanian, Dutch, Japanese, Czech, Arabic, Polish, Spanish, Hungarian, Kazakh, Vietnamese, Italian, Bulgarian, Afghan, Hindi, Mongolian, German and French. The background is taken from NASA archive photo # 83 HC 213 which has been used for each set of posters in the series.*

*The central image of the poster represents the Congress theme "Space and Education—A Message to the Youth." The image shows a stylized spacecraft superimposed over a painting of Earth; the rays represent the critical link between knowledge, education and space exploration, particularly for tomorrow's explorers, the world's youth. The image illustrates the conviction of ASE members that space technologies and exploration not only benefit life on Earth but also educate and inspire students to academic excellence.*

# **Association of Space Explorers • USA**

**Annual Report  
1998**

**Association of Space Explorers • USA  
1150 Gemini Ave.  
Houston, TX 77058**

## Executive Summary

The Association of Space Explorers (ASE) is an independent, nonprofit 501(c)(3) professional and educational organization of over 270 individuals from 28 nations who have flown in space. Founded in 1985, ASE's mission is to provide a forum for professional dialogue among individuals who have flown in space; to promote space science and exploration for the benefit of all; to enhance education at all levels; to foster environmental awareness; and to encourage international cooperation in space.

Each year since 1985, ASE has convened a Planetary Congress to serve as a forum where members interact professionally and develop ASE programs. The week-long event generates communication on issues of common interest to the international space community, government agencies and the public. Members exchange information about their national space programs, make technical presentations on selected topics relevant to human space flight operations, discuss the Congress theme and present the ASE Planetary Award to a person who has made an outstanding contribution related to that theme. Past recipients of the award include Jacques Yves Cousteau, Oleg Gazenko and Gerard O'Neill, Thomas Paine, Boris Raushenbakh, Yash Pal, Hendrick van de Hulst, Hans Dietrich Genscher, Isaac Asimov, Hermann Bondi, Yuri Gagarin, Stanislaw Lem, Nicolas Matte, José Maria Figueres and Edith Cresson

As the only professional association for astronauts, ASE supports the advancement of space exploration by providing opportunities for communication among space professionals at the international level. The Association has worked closely with other international professional space organizations to expand and invigorate international dialogue on such issues as space safety, rescue and human performance, often resulting in published technical proceedings and papers. ASE regularly sponsors international discussions among astronauts on space flight operations.

With respect to education, ASE seeks to stimulate and inspire continual and higher learning by all people. To do this, ASE shares its members' knowledge and experience with the general public, and in particular with the world's youth. ASE members believe that increased public understanding of ecological and technological issues will help us make wise choices for our environment and for the future direction of space exploration. ASE includes among its educational activities annual international member lecture tours, sponsorship of space-related film, drama and video productions, cooperation in the publication of space-related books and calendars and collaboration with the educational programs of other space-advocacy organizations such as the Challenger Center, National Space Society, United States Space Foundation, and Planetary Society.

ASE considers it important to provide its members with opportunities to communicate their unique perspective of Earth to help stimulate humanity's sense of responsibility for the future of our planet. ASE programs seek to expand the important role space plays in monitoring the impact of human activity on the Earth, since the environmental knowledge gained from space is useful for the resolution of many ecological problems. Among ASE's premier activities in the area of environmental education have been the publication of the international best-seller *The Home Planet* in hard and soft cover, participation in the United Nations Earth Day and Mission to Planet Earth ceremonies, lead partnership in the "Arbor Project" international forest conservation effort, and sponsorship of environmental films and videos.

ASE maintains a commitment to fostering international cooperation in space exploration. Since space exploration is a technology-intensive and financially expensive activity, ASE members understand that when many countries jointly invest their resources and ingenuity in common undertakings, all stand to benefit. Chief among ASE's activities in this area are professional exchanges and facilities visits among astronauts of different national space programs, sponsorship of international dialogue on space rescue, and a series of high level invitational discussions in Washington which have resulted in several papers on new opportunities for space cooperation in the changing global political environment.

ASE is committed to continuing its work to improve the quality and effectiveness of the human enterprise in space. Global developments suggest that international cooperation in space science and exploration will continue to expand in the 21st century. The Association of Space Explorers will continue to contribute both leadership and vision as humanity moves outward from our home planet and toward the stars.

Professional Forum

To promote the exchange of spaceflight experiences and technical information concerning space operations, science, development, testing and training.

1. Conduct an annual ASE Planetary Congress.
2. Take the lead to promote technical presentations at annual ASE Planetary Congresses.
3. Conduct regular technical interchange meetings for spaceflight crews

Space Science and Exploration

To promote the exploration of space to enrich human life, bring nations together, advance science and technology, and stimulate intellectual curiosity and the expansion of knowledge.

1. Emphasize space science and exploration in development of annual Congress themes and agenda.
2. Advocate space exploration through public statements, position papers, symposia, and media interviews.

Education

To share knowledge gained from our experience emphasizing the significance and benefits of space science and exploration. To promote scholastic excellence by supporting educators and motivating students.

1. Establish and distribute ASE Educators Awards.
2. Jointly sponsor activities with other educational organizations.
3. ASE member participation in educational appearances on behalf of ASE.
4. ASE member attendance at annual ASE Congress and participation in associated community activities.

Environmental Awareness

To promote understanding of our home planet and the limits of its natural resources, and encourage the use of space platforms in characterizing and monitoring Earth's resources.

1. Establish private sector affiliations and partnerships in pursuit of shared environmental goals.
2. Identify and support and/or participate in public and community environmental awareness-related projects.
3. Develop exhibits with environmental focus.
4. Seek national and international environment - focused member appearances opportunities.

International Cooperation

To encourage international human spaceflight and other cooperative space endeavors, promote technical exchanges, advocate operational compatibility, and contribute to related programs in other professional organizations.

1. Support or sponsor fora on international cooperation, including examination of such issues as compatibility of equipment and procedures.
2. Strengthen ASE affiliation with related international professional organizations.
3. Support active-duty astronaut international visits and exchanges.

**I Congress**

**October 2-7, 1985**

**Cernay, France**

*Theme: The Home Planet*

*Award: Jacques-Yves Cousteau*

**VIII Congress**

**August 23-30, 1992**

**Washington, DC**

*Theme: To Mars Together*

*Award: Isaac Asimov*

**II Congress**

**October 13-17, 1986**

**Budapest, Hungary**

*Theme: Towards Space Civilization*

*Award: Gerard O'Neill and Oleg Gazenko*

**IX Congress**

**October 10-17, 1993**

**Vienna, Austria**

*Theme: Space for Life*

*Award: Hermann Bondi*

**III Congress**

**October 12-23, 1987**

**Mexico City, Mexico**

*Theme: The Next Generation in Space*

*Award: Thomas Paine*

**X Congress**

**August 9-16, 1994**

**Moscow/Lake Baikal, Russia**

*Theme: Space and Ecology*

*Award: Yuri Gagarin (posthumous)*

**IV Congress**

**October 3-7, 1988**

**Sofia, Bulgaria**

*Theme: Space and Evolution*

*Award: Boris Raushenbakh*

**XI Congress**

**September 12-19, 1995**

**Warsaw, Poland**

*Theme: Space and Contemporary Society*

*Award: Stanislaw Lem*

**V Congress**

**November 11-15, 1989**

**Riyadh, Saudi Arabia**

*Theme: Space for Earth*

*Award: Yash Pal*

**XII Congress**

**September 28-October 4, 1996**

**Montreal/Ottawa/Quebec, Canada**

*Theme: Cooperation in Space, Progress for Humanity*

*Award: Nicolas Matte*

**VI Congress**

**July 2-6, 1990**

*Groningen, The Netherlands*

*Theme: Space Brings People Together*

*Award: H.C. Van de Hulst*

**XIII Congress**

**September 12-19, 1997**

**San José, Costa Rica**

*Theme: Space Technology for Sustainable Development*

*Award: José María Figueres*

**VII Congress**

**September 30-October 5, 1991**

**Berlin, Germany**

*Theme: Space Has No Boundaries*

*Award: Hans Dietrich Genscher*

**XIV Congress**

**October 19-23, 1998**

**Brussels, Belgium**

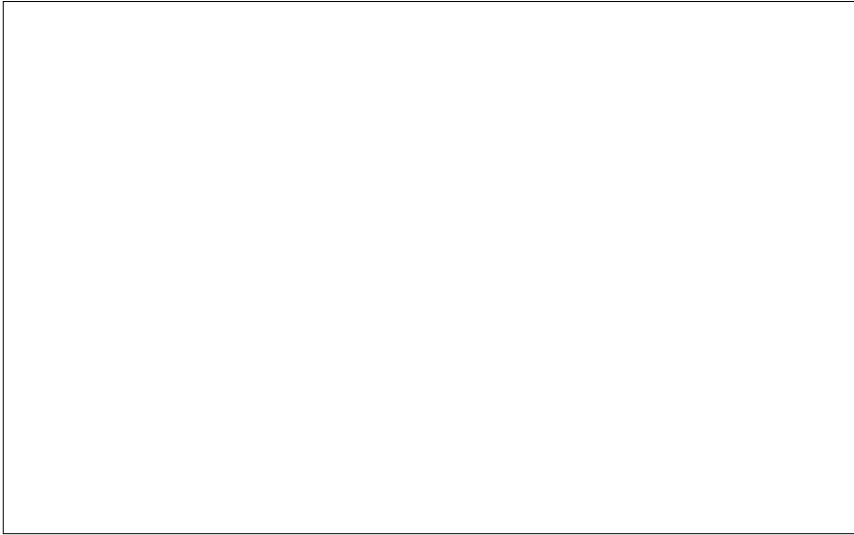
*Theme: Space and Education-A Message to the Youth*

*Award: Edith Cresson*

*To promote the exchange of space flight experiences and technical information concerning space operations, science, development, testing and training.*

*The Annual Planetary Congress is ASE's primary forum for professional exchange among U.S., Russian and international astronauts and cosmonauts. ASE members meet to review and discuss developments in astronautics, to evaluate existing ASE programs and to plan future activities. The Congress affords a unique opportunity for communication between members of the international space community, government agencies and the public.*

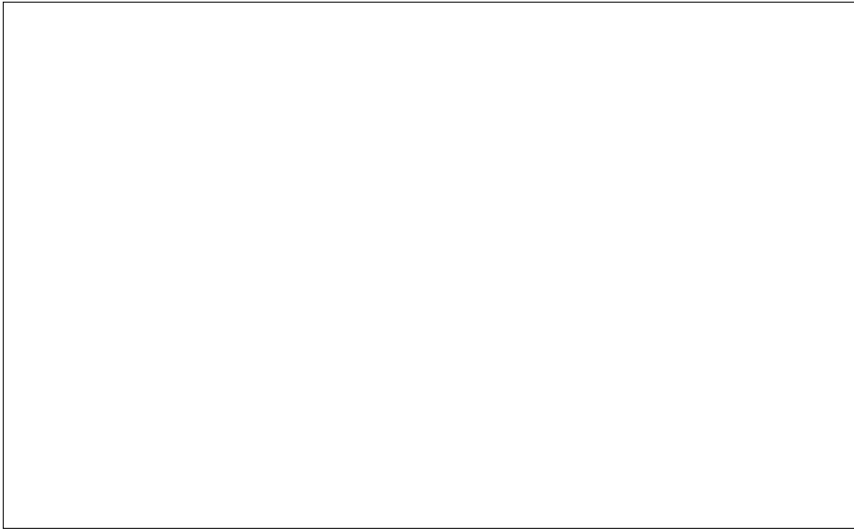
The 14th Planetary Congress of the Association of Space Explorers was held 19-23 October, 1998 in Brussels, Belgium. Hosted by Belgian flier Dirk Frimout (STS-45), the theme of the 14th Congress was "Space and Education—A Message to the Youth" and many of the week's activities included the participation of students from all over Belgium and Europe. Eighty-seven fliers and spouses from eighteen countries attended.



*Congress host Dirk Frimout (Belgium) confers with TM the King and Queen of Belgium during the Opening Ceremony. Photo: M.R. Schiemsky Sid*

The Opening Ceremony of the Congress was held Monday, October 19 with over 300 students, government officials and T.M. the King and Queen of Belgium in attendance. The ceremony was convened at the Congress Palace in downtown Brussels and hosted by the Belgian Federal Minister for Science Policy, the Vice-Prime Minister of Belgium and the Belgian Minister for National Defense. The Opening Address was made by the Federal Minister for Science Policy, Mr. Yvan Ylieff, who welcomed the assembled astronauts and cosmonauts to Belgium and introduced Belgian flier and Congress host Dirk Frimout. Frimout introduced the Congress theme and spoke on the inextricable link between space and education, presenting the astronauts and cosmonauts as role models for all of humanity and

appealing to the assembled students and children everywhere to take advantage of opportunities to pursue a life-long program of education.



*Members of the Executive Committee greet the King and Queen following the Opening Ceremony (L to R): TM the King and Queen of Belgium, Frederick Gregory (USA), Jon McBride (USA), Alexei Leonov (Russia), Gennadi Strekalov (Russia, facing away). Photo: M.R. Schiemsky Sid*

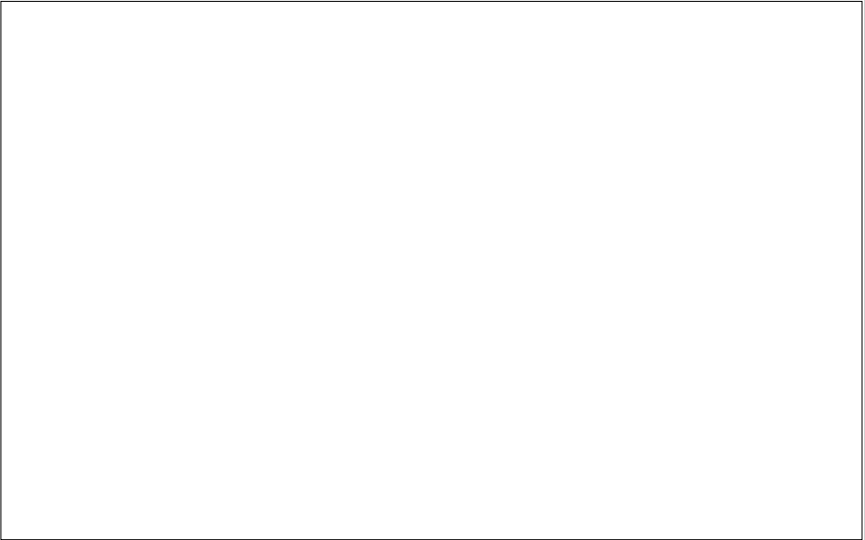
ASE Co-Presidents Alexei Leonov and Frederick Gregory followed with a brief history of the Association and

its Congresses and the important role that space research and exploration play in the development of modern society. To close out the ceremony, three Belgian students who were chosen to address the assembly spoke on how space exploration inspired their academic goals and Antonio Rodota, Director General of the European Space Agency recapped ESA's 1998 activities in space and its plans for the coming century. Following the ceremony, T.M. the King and Queen were introduced to a small group of fliers during a cocktail reception at the Congress Palace.

Monday afternoon, the Theme Session was convened again at the Congress Palace and European Commissioner for Science, Research and Development Mme. Edith Cresson was awarded the 1998 ASE Planetary Award, the Crystal Helmet, for her efforts to promote education in science and engineering among European youth. Chaired by ASE members Jon McBride and Gennadi Strelakov, the session also featured remarks by Karl Doetsch, president of the International Space University, ASE members Wubbo Ockels and Alexander Serebrov, as well as Hugo Wexks, Chairman of the Belgian Federal Council of Science Policy.

That evening, an Award Banquet was held at the Belgian Air & Space Museum in Brussels, where a Certificate of Recognition and Appreciation was awarded to the Euro Space Center in Transinne for their success in engaging European youth in the space adventure .

Tuesday, October 20 featured the European Academic Session at the Royal Belgian Academy of Sciences, chaired by ASE Executive Committee members Dumitru Prunariu and Ulf Merbold. The session focused on European space research and activities. After an opening statement by Congress host Dirk Frimout, Mr. Martin Huber, Director of the ESTEC-ESA Space Science Department, reported on European activities in the field of life sciences; Jean-Paul Malingreau of the European Joint Research Center followed with a report on European achievements in the field of Earth observations; Maurice Praet, Vice-president of Alcatel ETCA gave an overview of European activities in the field of space telecommunications and Matthias Ruete of the European Commission described European policy in the field of satellite positioning/navigation systems.



*ASE-USA President Jon McBride presents the Crystal Helmet Award certificate to European Commissioner Edith Cresson during the Theme Session. Photo: Ing. Marius Werner*

After a short break for lunch, Ulf Merbold reported on European manned space activities; Dumitru Prunariu and Mirosław Hermaszewski spoke on the status of space research and development in Central and Eastern Europe; and Jörg

Feustel-Büechl, ESTEC-ESA Director of Manned Spaceflight and Microgravity gave a brief summary of European involvement in the International Space Station. While the European Academic Session was taking place, several ASE members traveled to Belgacom headquarters in Brussels to participate in a nationwide internet conference with students from all over Belgium.


That afternoon, the fliers returned to the Hotel Metropole for the first working session of the Congress on Crew Safety and

Technical Issues. Chaired by Frederick Gregory and Gennadi Strekalov, the session featured a presentation by Hank Hartsfield Jr., who proposed a series of high-level caution and warning standards developed by the ASE Crew Safety Committee's Sub-committee on Advanced Crew Safety Concepts. Alexander Lazutkin gave a behind-the-scenes and personal account of the MIR-Progress collision in June, 1997 with additional commentary by TsUP Flight Controller Vladimir Solovyov.

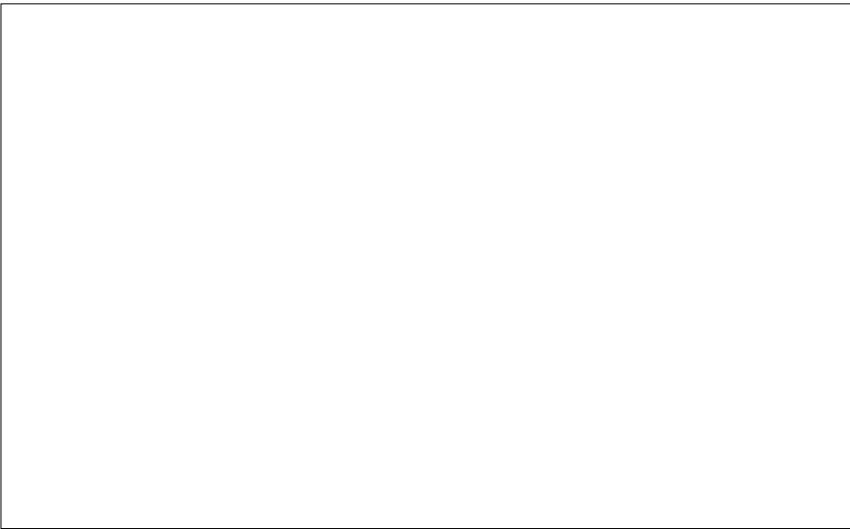
Presentations were also made by KSC personnel Don Doerr and Pat Simpkins on "Bioregenerative Life Support System Safety Issues for Long-Duration Spaceflight" and the "Human Factors Event Evaluation Model," respectively. Following the session, the astronauts and cosmonauts gathered for the traditional Congress poster signing ceremony. That evening, the delegations were treated to a buffet dinner hosted by the Minister-President of the Flanders Region at Technopolis, a newly

developed technology exhibition featuring interactive displays and educational space- and technology-related materials.

Wednesday was Community Day at the 14th



*(Left to Right, back) Owen Garriott (USA), Dirk Frimout (Belgium), Yevgeni Khrunov (Russia) and Charlie Walker (USA) gather with Belgian students following the European Session at the Academy of Sciences. Photo: Susan Flowers*



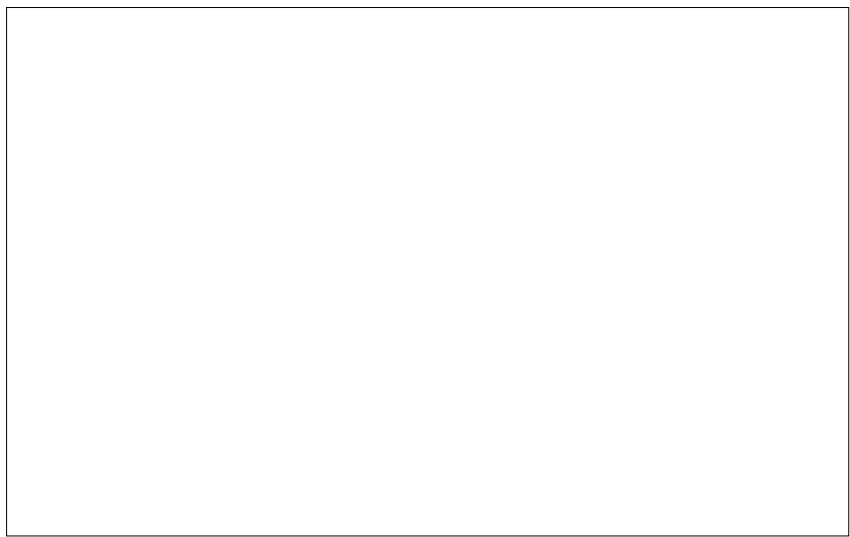
*Members of the STS 51D crew gather for an unofficial crew portrait. (Left to Right), Don Williams (USA), Bo Bobko (USA), Jeff Hoffman (USA), Charlie Walker (USA). Photo: Diane Bobko*

Congress. All attending astronauts and cosmonauts traveled in small groups to visit over 20 venues all across Belgium. The fliers visited schools in the communities of Hasselt-Kermt, Koersel, Koksijde, Lier, Waasmunster, Antwerp, Heule, Mechelen, Rumst-Reet, Zottegem, Sint-Niklaas, Genk, Gent-Oostakker, Haacht and Ieper. Additionally, eight fliers participated in debates at UFSIA in Antwerp, the Europlanetarium in Genk, the CTL Campus in Gent, and at the University of Leuven in Leuven. That evening, the fliers and their spouses attended the opera *La Noce de Figaro* at the Palais de La Monnaie Opera House in Brussels.

Thursday morning the delegates traveled to Transinne for a day at the Euro Space Center and Space Camp Belgium. The first session of the day was the traditional International Space Programs Review, chaired by Michael Lopez-Alegria and Vladimir Titov; Talgat Musabayev recounted his last flight aboard the MIR space station and showed a video of the EVA performed by he and Nikolai Budarin to replace an external thruster assembly, Don Peterson presented the second half of the work done by the ASE Crew Safety Committee's Subcommittee on Advanced Crew Safety Concepts and Michael Lopez-Alegria discussed ISS assembly requirements and schedules.

That afternoon, the Executive Session was held at the Euro Space Center and Miroslaw Hermaszewski and Dorin Prunariu were re-elected to the ASE Executive Committee. Following the Executive Session, the Closing Ceremony was held and the 14th Congress was officially adjourned.

Friday the fliers and their spouses traveled by bus to Bruges, where they took a canal boat tour of the historic city and were welcomed by the Mayor of Bruges at a City Hall reception. Returning to Brussels that evening, the delegations attended the Closing Banquet at the Concert Noble, hosted by the Executive Club of Belgium. Included in the program was the presentation of awards to the members of the local organizing committee and staff.



*Members of the Executive Committee present Euro Space Center Director Hugo Marée with a certificate of appreciation at the Belgian Air & Space Museum. (left to right) Gennadi Strelakov (Russia), Dirk Frimout (Belgium), Hugo Marée, Jon McBride (USA). Photo: Roger Crouch*

*To promote the exploration of space to enrich human life, advance science and technology in support of human space exploration and stimulate intellectual curiosity and the expansion of knowledge.*

In an era of declining budgets and shrinking resources, the implementation of complex and costly human space endeavors will depend on multi-lateral cooperation and the coordination of the resources and talents of many nations. ASE's role as a forum for the exchange of information and ideas across borders has contributed to the genuine internationalization of space exploration.

In 1998, ASE's Committee on Crew Safety and Technology Development began work on producing a set of international design standards for caution and warning systems on future manned vehicles and advanced crew safety concepts for extended-duration, relatively autonomous missions such as a trip to Mars. The Association will endeavor to have these international standards adopted by the various space-agencies and mandated for future vehicle design and operation.

*To share knowledge gained from our experience emphasizing the significance and benefits of space science and exploration. To promote scholastic excellence by motivating students through the use of space-themed curricula.*

ASE members regularly appear before educational and professional organizations worldwide. At every opportunity ASE members strive to improve public understanding of our endeavors in space and to inspire young people to continue the challenge begun nearly forty years ago with the launch of Yuri Gagarin, Earth's first human emissary to outer space.

At the 14th Congress in Belgium, the ASE Executive Committee approved the establishment of an International Standing Committee on Education. The committee is comprised of eight ASE members from five countries and is chartered to: 1) develop and distribute space-related curricula and other interactive learning materials for use in educational programs; 2) develop, in coordination with NASA and other appropriate organizations space and technology-related programs and activities for students, teachers and parents; and 3) promote and assist in the development of internet and exhibit-based materials for facilitating awareness and understanding of human space exploration, astronomy, space science and technology among educators, students, educational institutions and the general public. The committee's first and present task is a re-design and upgrade of the Association's internet web site.

## International Cooperation

*To encourage international cooperation in human space flight and other space endeavors, coordinate astronaut/cosmonaut technical exchanges, advocate operational and design compatibility and contribute to related programs in other professional organizations.*

ASE is the world's only organization to host regular symposia among US, Russian and international astronauts and cosmonauts on space flight operations. ASE and its members support and participate in meetings of space professionals and policy-makers at the national and international levels. Building informed professional relationships and facilitating astronaut and cosmonaut interaction and technical exchanges have been the foundation of ASE's efforts to advance international cooperative efforts in the human exploration of space. Since 1994 the Association has maintained a permanent exhibit at the Vienna International Centre in Austria as well as NGO observer status at the United Nations Committees on Peaceful Uses of Outer Space (COPUOS) and Sustainable Development (CSD).

In 1998, ASE held its 14th Planetary Congress in Brussels, Belgium. Eighty-seven fliers from eighteen countries participated in the week long event. Several Congress sessions were dedicated to the exchange of information among fliers; these included sessions on crew safety, European activities in space and a review of 1998 international flight operations.

## Environmental Awareness

*To promote greater understanding and awareness of our home planet and the limits of its natural resources and to encourage the use of space platforms in characterizing and monitoring Earth's natural resources.*

The view from space imbues ASE members with a unique perspective of the Earth and a heightened sense of responsibility for the well-being of our home planet. ASE continues to advocate the use of space-based observation platforms to monitor humanity's impact on the global environment and the timely world-wide dissemination of data gathered by these space resources.

In October, 1998, ASE members participated in United Nations Day activities in Stockholm, Sweden hosted by the Globetree Foundation and sponsored in part by the National Environmental Board of Sweden. A central theme of the event was that all of humanity shares a common home and that solutions to our common problems are best solved through communication and cooperation. ASE members joined scientists, philosophers and artists as speakers at several seminars to give the space travelers perspective on the fragility of our home planet and its environment.

Shown below are the Executive Committee, Boards of Directors, Standing Committees and staff of ASE at the end of 1998.

**ASE Executive Committee**

Frederick Gregory  
 Mirosław Hermaszewski  
 Alexei Leonov  
 Jon McBride  
 Ulf Merbold  
 Dorin Prunariu  
 Gennadi Strekalov  
 Viktor Savinykh  
 Charles Walker

**ASE-USA  
 Board of Directors**

Jon McBride, President  
 Charlie Precourt,  
 Vice-President  
 Bo Bobko, Treasurer  
 Joe Allen  
 John Fabian  
 Owen Garriott  
 Rick Hieb  
 Tom Stafford  
 Charles Walker

**ASE-Russia  
 Board of Directors**

Gennadi Strekalov,  
 President  
 Vladimir Vasyutin,  
 Vice-President  
 Alexei Leonov  
 Vladimir Lyakhov  
 Alexander Poleshchuk  
 Victor Gorbato  
 Oleg Makarov  
 Musa Manarov

**ASE-USA Staff**

Andy Turnage, Executive Director

**ASE-Russia Staff**

Victor Blagov, Director

**ASE International Standing Committees**

**POLICY, LIAISON AND  
 PUBLIC RELATIONS**

Dorin Prunariu, Chair  
 Bob Cenker  
 Ed Gibson  
 Yuri Glazkov  
 Pyotr Klimuk\*  
 Vladimir Kovolyonok  
 Alexei Leonov  
 Byron Lichtenberg  
 Vladimir Remek\*  
 Helen Sharman  
 Valentina Tereshkova

**CREW SAFETY AND  
 TECHNOLOGY DEVELOPMENT**

Fred Gregory, Chair  
 Roy Bridges, Jr.  
 Reinhold Ewald  
 Henry Hartsfield, Jr.  
 Byron Lichtenberg  
 Bruce McCandless II  
 Ulf Merbold  
 Steve Nagel  
 Don Peterson  
 Gennadi Strekalov

\* Subcommittee on History and Archives

**ECOLOGY**

Mario Runco, Jr., Chair  
 Toyohiro Akiyama  
 Alexander Alexandrov (Bul.)  
 Mary Cleave  
 Sam Durrance  
 Bertalan Farkas  
 Dirk Frimout  
 Yuri Glazkov  
 Alexander Ivanchenkov  
 Bruce McCandless II  
 Ernst Messerschmid

**EDUCATION**

Mille Hughes-Fulford, Chair  
 Helen Sharman  
 Dirk Frimout  
 Charlie Walker  
 Mario Runco, Jr.

Vladimir Remek  
 Viktor Savinykh  
 Vitaly Sevastyanov

**General Statement  
of the  
Association of Space Explorers**

**14th Planetary Congress  
Brussels, October 22nd 1998**

Bearing in mind that the theme of the 14th Planetary Congress of the Association of Space Explorers is "Space and Education – a Message to the Youth", we submit the following statement to all nations, governments and peoples of the world, and in particular to the youth.

We, astronauts and cosmonauts of the world, representing 28 nations, support the idea that access to education is a fundamental human right and that no person should be deprived of their right to a basic and continued education. We firmly believe that space technology plays an important role in expanding education to all people in all countries of the world, regardless of race, nationality or socio-economic status.

Science and technology have been significant factors in improving the quality of life on Earth in the last century; we are about to embark on a new millennium, and education will undoubtedly be the key to our success in the next. But education is not only the responsibility of parents and educators. It is also the responsibility of governments and nations to provide the proper support, to invest in schools and infrastructure which will allow the world's children to pursue their dreams and to build a better future for us all.

Investment in education is an investment in human knowledge, which is the only truly inexhaustible resource in this world. To this end, we cosmonauts and astronauts call on all political leaders all over the world to invest more in proper education for every child and on all spacefaring nations to invest a part of their annual space exploration budgets on innovative, creative space-related programs for the youth.

But we also appeal to the youth of the world to commit to a life-long process of learning; set your goals at a level where you must continually strive to reach them, and never be deterred from pursuing your dreams.

You will be responsible for the future of planet Earth. We live on a fragile planet with limited resources and delicate environmental balances and we all share an important responsibility to protect and preserve our natural heritage for our children and for all future generations.

And so we give this mission to the youth : as we hand over to you the responsibility for the protection of our common home, reach for the stars, wherever you may live, and follow in our footsteps to continue the work that we have begun.

*The following individuals had joined the Association of Space Explorers and performed or begun their respective space missions as of December 31, 1998*

* Loren Acton, USA STS 51-F	Patrick Baudry, France STS 51-G	Franklin Chang-Díaz, Costa Rica STS 34, STS 46, STS 60, STS 75 STS 91
James Adamson, USA STS 28, STS 43	Georgi Beregovoi, Russia † Soyuz 3	Jean-Loup Chrétien, France Soyuz T-6, Soyuz TM-7, STS 86
Viktor Afanasyev, Russia Soyuz TM-11, Soyuz TM-29	* Anatoly Berezovoi, Russia Soyuz T-5	Mary Cleave, USA STS 61-B, STS 30
* Toyohiro Akiyama, Japan Soyuz TM-11	John Blaha, USA STS 29, STS 33, STS 43, STS 58 STS 79/MIR 22	Jean-François Clervoy, France STS 66, STS 84
Vladimir Aksyonov, Russia Soyuz 22, Soyuz T-2	* Karol Bobko, USA STS 6, STS 51-D, STS 51-J	Michael Clifford, USA STS 53, STS 59, STS 76
Sultan Al-Saud, Saudi Arabia STS 51-G	Roberta Bondar, Canada STS 42	Michael Coats, USA STS 41-D, STS 29, STS 39
Buzz Aldrin, USA Gemini 12, Apollo 11	Vance Brand, USA ASTP, STS 5, STS 41-B, STS 35	Kenneth Cockrell, USA STS 56, STS 69, STS 80
Alexander Alexandrov, Russia Soyuz T-9, Soyuz TM-3	Daniel Brandenstein, USA STS 8, STS 51-G, STS 32, STS 49	Michael Collins, USA Gemini 10, Apollo 11
* Alexander Alexandrov, Bulgaria Soyuz TM-5	* Roy Bridges Jr., USA STS 51-F	Charles Conrad Jr., USA Gemini 5, Gemini 11, Apollo 12, Skylab 2
Joseph Allen, USA STS 5, STS 51-A	Curtis Brown Jr., USA STS 47, STS 66, STS 77, STS 85 STS 95	Richard Covey, USA STS 51-I, STS 26, STS 38, STS 61
Jerome Apt, USA STS 37, STS 47, STS 59, STS 79	Mark Brown, USA STS 28, STS 48	John Creighton, USA STS 51-G, STS 36, STS 48
Anatoly Artsebarsky, Russia Soyuz TM-12	James Buchli, USA STS 51C, STS 61A, STS 29, STS 48	Robert Crippen, USA STS 1, STS 7, STS 41C, STS 41G
Yuri Artyukhin, Russia Soyuz 14	* Nikolai Budarin, Russia STS 71, Soyuz TM-21	* Roger Crouch, USA STS 83, STS 94
* Oleg Atkov, Russia Soyuz T-10	* Valeri Bykovsky, Russia Vostok 5, Soyuz 22, Soyuz 31	Walter Cunningham, USA Apollo 7
* Toktar Aubakirov, Kazakhstan Soyuz TM-13	Robert Cabana, USA STS 41, STS 53, STS 65, STS 88	Vladimir Dezhurov, Russia Soyuz TM-21
Sergei Avdeev, Russia Soyuz TM-15, Soyuz TM-28	* Ken Cameron, USA STS 37, STS 56, STS 74	Takao Doi, Japan STS 87
James Bagian, USA STS 29, STS 40	Scott Carpenter, USA Mercury 7	Charles Duke, Jr., USA Apollo 16
Michael Baker, USA STS 43, STS 52, STS 68, STS 81	Gerald Carr, USA Skylab 4	Bonnie Dunbar, USA STS 61-A, STS 32, STS 50, STS 71, STS 89
* Alexander Balandin, Russia Soyuz TM-9	Manley Carter, USA † STS 33	* Samuel Durrance, USA STS 35, STS 67
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* Yuri Baturin, Russia Soyuz TM-28		

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