



ASSOCIATION OF SPACE EXPLORERS

ANNUAL REPORT – 2019





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The Association of Space Explorers - USA (ASE-USA) is a 501c3 nonprofit organization comprised of current and former flown astronauts and cosmonauts who are citizens of or permanently reside in the United States. ASE-USA is one of four regional chapters of the international Association of Space Explorers and operates in alignment with the principals as codified in the original Charter of the international ASE but under the direction of its regional (USA) Board of Directors.

The Association

The Association of Space Explorers (ASE) is the international professional and educational association of men and women who have flown in Earth orbit. Since 1985, over 400 flown astronauts and cosmonauts from 38 nations have joined ASE to work together on programs and activities of common interest. ASE activities are conducted under the auspices of four regional chapters in Asia, Europe, Russia and the United States with overall guidance by the international Executive Committee.

DELIVERING THE ASTRONAUT PERSPECTIVE

ASE Membership

Membership in the organization is open to any person who has completed at least one orbit of the Earth in space (as defined by the FAI) in a spacecraft.

ASE is represented by over 400 space fliers from 38 different countries, including Afghanistan, Austria, Belgium, Brazil, Bulgaria, Canada, China, Costa Rica, Cuba, Czech Republic, Denmark, France, Germany, Hungary, India, Israel, Italy, Japan, Kazakhstan, Malaysia, Mexico, Mongolia, Netherlands, Poland, Romania, Russia, Saudi Arabia, Slovakia, South Africa, South Korea, Spain, Sweden, Switzerland, Syria, Ukraine, United Kingdom, United States and Vietnam.



Our Vision

A world where living, working, and exploring in space will be as familiar to humanity as life on our home planet.

Our Mission

- » to promote the global benefits of space science, exploration and international cooperation;
- » to educate and inspire future generations, and;
- » to foster better stewardship of our home planet.

Executive Summary

The Association of Space Explorers (ASE) is an independent, nonprofit 501(c)(3) professional and educational organization of over 400 flown astronauts and cosmonauts from 38 nations. Founded in 1985, ASE's mission is to provide a forum for professional dialogue among individuals who have flown in space; to promote the benefits of space science and exploration; to promote education in science and mathematics and inspire students at all levels; to foster environmental awareness; and to encourage international cooperation in the peaceful uses of outer space. ASE activities are conducted under the auspices of four regional chapters, with oversight and coordination provided by the international Executive Committee and the regional Boards of Directors.

As the only professional association for flown astronauts and cosmonauts, ASE supports the advancement of space exploration by providing opportunities for communication among space professionals at the international level. The Association works closely with other international space organizations to expand and invigorate dialogue on such issues as crew safety, operational compatibility, space traffic management and orbital debris and raising global awareness about the threat of potential asteroid impacts.

ASE takes a leading role in coordinating international discussions among astronauts and cosmonauts on human space flight operations. Since 1985, ASE has convened an annual Planetary Congress to generate discussion on issues of common interest to the international space community, government agencies and the public. Astronauts and cosmonauts exchange information about their respective space programs and host technical presentations by subject matter experts on topics relevant to human space flight and exploration.

With respect to education, ASE seeks to stimulate interest in science and mathematics and inspire in students a life-long commitment to education. ASE enables the next generation of explorers through undergraduate academic scholarships and tuition awards at universities in the USA and Europe. ASE also contributes hands-on STEM learning experiences for primary, middle and high-school students and teachers through its AstroSchool and AstroSat Challenge educational programs. ASE members also engage in country-wide educational and public outreach on the traditional Congress Community Days; fliers share their knowledge and experiences with the general public, and in particular with tomorrow's leaders – the world's children.

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. International cooperation in space science and exploration will continue to expand in the 21st century. The Association of Space Explorers continues to contribute both leadership and vision as humanity moves outward from our home planet and toward the stars.

STEM & Public Outreach

A key component of ASE's mission is to enable and grow a technically knowledgeable and proficient future workforce, which is part of an international education imperative to ensure our global future economic and scientific prosperity. As part of ASE's STEM outreach efforts, our astronaut and cosmonaut members fund scholarships and teacher training programs, visit schools, universities and youth groups world-wide, and interact with thousands of teachers, parents and students each year. ASE members bring an important viewpoint and inspirational message that inspires young people to pursue their goals. With their unique experiences, astronauts and cosmonauts can ignite the imaginations of teachers, the public and students. ASE continuously explores creative ways to engage and inspire the next generation of scientists, astronauts and engineers.

Public Policy Resource

Launching humans into space is a difficult undertaking requiring long term vision, planning, and commitment. The continuing success of expanding the human presence into space relies on informed, deliberate, and stable policies, both domestically and internationally. ASE members, with their extensive experience in the technology, operations, and management of space exploration contribute subject matter expertise to inform policy makers and advocate on behalf of the spacefaring community on topics such as the importance of international cooperation in space, planetary defense, astronaut/cosmonaut health, and space traffic management/orbital debris. ASE believes that the astronaut/cosmonaut community can make a positive impact on policy formation by serving as a resource for addressing policy questions.

Forums for Information Exchange

ASE provides opportunities for its members to stay connected with current events and the larger spacefaring community. ASE holds an annual international Planetary Congress and the regional chapters organize technical sessions and public outreach at their respective astronaut reunions. ASE also supports and participates at international technical conferences such as the biennial IAA Planetary Defense Conference, the annual IAF International Astronautical Congress, and the International Symposium on Peaceful Uses of Space Technology (Health). ASE maintains Observer status at the UN Committee on Peaceful Uses of Outer Space in Vienna and participates in annual meetings of the Scientific & Technical Subcommittees. Partnering with other aerospace societies and organizations, ASE members participate in technical panels and engage in other activities which transmit the collective experience of the astronaut/cosmonaut community to other technical professionals.

SUPPORTING STEM EDUCATION

AstroSchool

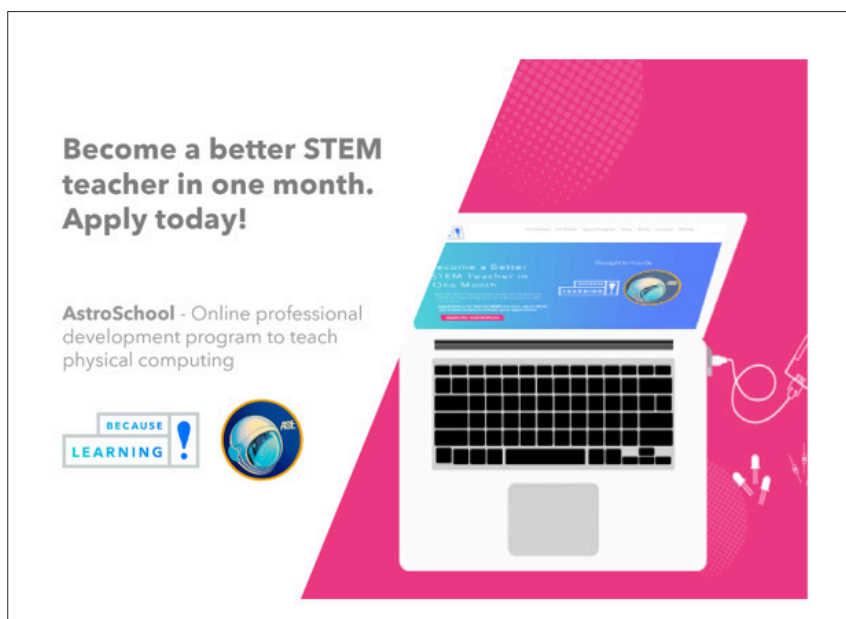
In 2019, ASE-USA partnered with BecauseLearning! to present “AstroSchool,” training teachers to effectively bring STEM technology into their curricula.

AstroSchool is a free, six-week certified professional development course that exposes teachers to sensors, micro-controllers, and coding, with particular focus on how to teach standards-based STEM lessons in the classroom. Teachers learn how to incorporate physical computing into their existing curriculum while interacting with other teachers for best practices and ideas.

Each selected teacher receives a BecauseLearning sensor kit and a one-year license to over 150 lesson plans. Upon completion, teachers also receive a certificate that can be used towards continuing education units. AstroSchool results show that this approach is an excellent method for building sustainable STEM programs in schools that have lasting effects on future students and empower teachers with knowledge, confidence, and a willingness to learn and teach new technical skills.

“I don't have to be the expert... just brave!! The system is easy for the kids to navigate – they have confidence in their ability to use and manipulate the materials and code. It's always exhilarating to see the kids take off with all the questions and ideas they get from the experience! It's a lightning rod for exploration!”

– AstroSchool Teacher Participant



ISS Crew Fund Scholarships

ASE Europe, with financial support from the ISS Crew Fund, enables young space professionals to attend the high-level International Programme/Project Management Committee's (IPMC) workshop, organised each year by the International Astronautical Federation (IAF) in the framework of the International Astronautical Congress (IAC).

ISU Master's Thesis Award

In 2019, ASE - Europe selected Fabio Zecca for the Best Human Spaceflight-related thesis at the International Space University Space Science Program. European astronauts Paolo Nespoli and Jean-François Clervoy presented the award on behalf of ASE.

ISU Space Science Program

Each summer since 2014, ASE Europe, the European chapter of the Association of Space Explorers, has awarded a scholarship to one of the participants of the Space Science Program (SSP) International Space University. The 2019 scholarship recipient was Anastasia Medvedeva, who remarked: "The Association of Space Explorers is an incredible organization which not only unites astronauts worldwide, but also has a significant impact on the popularization of space, by involving and encouraging young space professionals like me".

ASE General & Legacy Scholarships

ASE Legacy Scholarships are established and funded by individual ASE members to support education in fields related to their personal and professional interests. ASE General Scholarships are established and funded by ASE in cooperation with accredited universities, other professional associations, and institutions of higher-learning worldwide. ASE general and legacy scholarships were awarded in 2019 at Washington State University and Colorado State University.

ASE Community Days

At each Planetary Congress, ASE members dedicate a full day for outreach with the local and national communities in the country where the Congress is being hosted. The astronauts and cosmonauts reach thousands of students, teachers, parents, and members of the general public to inspire and promote education in science, technology, engineering and mathematics.

ASE Near Earth Objects Committee

Human society faces a long-term hazard from asteroid and comet impacts on Earth. The chances are 100% that our planet will be struck again by a large near-Earth object (NEO), and we have discovered only a tiny fraction of the million or so objects capable of destroying a city. Recognizing the threat posed by hazardous NEOs, the ASE, as an international association of influential space fliers, is active in promoting global discussions aimed at a near-term capability to prevent a future damaging impact.

In 2019, ASE's NEO Committee, chaired by former astronaut Tom Jones, continued its work promoting global awareness of the asteroid impact threat by co-sponsoring the bi-annual IAA Planetary Defense Conference (PDC) in April. The PDC covered a variety of important topics in the NEO hazard space, including key developments in planetary defense, advancements in NEO discovery and characterization, NEO deflection/disruption models and tests, impactor mitigation campaign design, impact consequences and disaster response, and international legal issues, constraints and considerations for taking the decision to deflect or mitigate a potential impactor.

NEO Committee members also supported the annual Asteroid Day event in Luxembourg.



The Association formed its Committee on NEOs at its Congress in Salt Lake City in October 2005. The Committee is charged with bringing to the attention of world leaders and key international institutions the threat of asteroid impacts to life on Earth. In an Open Letter of October 14, 2005, the ASE said, in part:

“Due to advances in both the discovery of these objects and in space technology we are aware of the unique fact that these infrequent cosmic collisions are, using advanced space technology, both predictable and preventable. This distinctive and providential characteristic of NEO impacts allows the prevention of these largest of natural disasters, if, and only if, national governments and relevant international institutions understand these inevitable events and act together to prevent their occurrence.”

Space Traffic Management & Orbital Debris Mitigation

In 2018, the ASE unanimously approved a General Statement urging the international spacefaring nations to rapidly develop policies, technologies, protocols and/or treaties on Space Traffic Management (STM) in Low Earth Orbit (LEO) that would assess impact risk from space debris objects and formed an international Standing Committee on Space Traffic Management & Orbital Debris to develop an ASE position on space traffic management.

In 2019, the Committee, chaired by former astronaut Mark Brown, worked to develop a set of detailed recommendations to coordinate space traffic management and mitigate the growth of space debris objects in low-earth orbit. In March, the Committee submitted comments on “Mitigation of Orbital Debris in the New Space Age” to the US Federal Communications Commission, noting that even a modest number of satellites and debris represents a significant computational challenge to avoid collisions and that although individual countries may take the initial steps toward a solution, the only real answer is an international partnership to collect, verify and analyze potential on-orbit conjunctions and issue warnings when potential conjunction events are identified.

The Committee is finalizing an ASE position paper and statement of need for developing a comprehensive STM/OD program, including a template for STM/OD program organization, building an operational framework to address spacecraft and object categorization, spacecraft ownership, flight rules, mission planning, conjunction analyses, vehicle retirement/deorbit planning, debris ownership, financial and incident liability, and international applicability.

“As a first step towards clearing space in the future, international procedures should be developed for classifying identified tracked space debris objects, both registered and unregistered, as space debris and for establishing a unified catalog of space debris objects.”

– ASE General Statement on Space Traffic Management
XXXI Planetary Congress, Belarus 2018

United Nations / COPUOS

ASE maintains Observer status with the UN Committee on Peaceful Uses of Outer Space (COPUOS) with annual representation on the Scientific & Technical Subcommittees addressing near earth objects, space traffic management and orbital debris mitigation.



ASE Planetary Congress

The week-long Planetary Congress includes technical sessions featuring updates on human activities in space and briefings on future plans for low earth orbit and beyond. The attending astronauts and cosmonauts also dedicate time throughout the week, particularly on Community Day, to meet with and inspire young scientists, engineers and explorers all over the host country.

More than one hundred twenty astronauts and cosmonauts from nineteen countries gathered in Houston, Texas 14-18 October, 2019 for the XXXII ASE Planetary Congress. Hosted by former astronaut Bonnie Dunbar, the theme of the Congress was “Celebrating Apollo – Inspiring the Future”. The Title Sponsor for the XXXII Congress was the Texas A&M University.

The XXXII Congress featured technical sessions with discussions by Apollo program veterans and astronauts on their experiences preparing for humanity’s first visits to the Moon, reports by crewmembers of recent expeditions to the International Space Station, future plans for exploration of the Moon and Mars, updates on the development of new spacecraft and spacesuits, and discussions on emerging commercial human space transportation capabilities.

On the traditional Congress Community Day, astronauts and cosmonauts traveled to 53 schools, universities, across Texas to visit with students, teachers and community leaders.
(see Appendix III)



“CELEBRATING APOLLO – INSPIRING THE FUTURE”

International Astronautical Federation

ASE co-hosted and organized a Global Networking Forum astronaut panel at the International Astronautical Congress in Washington, DC. ASE members also participated as members of the IAF Human Spaceflight Committee organized technical session on Astronaut Training, Accommodations and Operations in Space. ASE members also met with students and young space professionals during IAC Public Day activities.



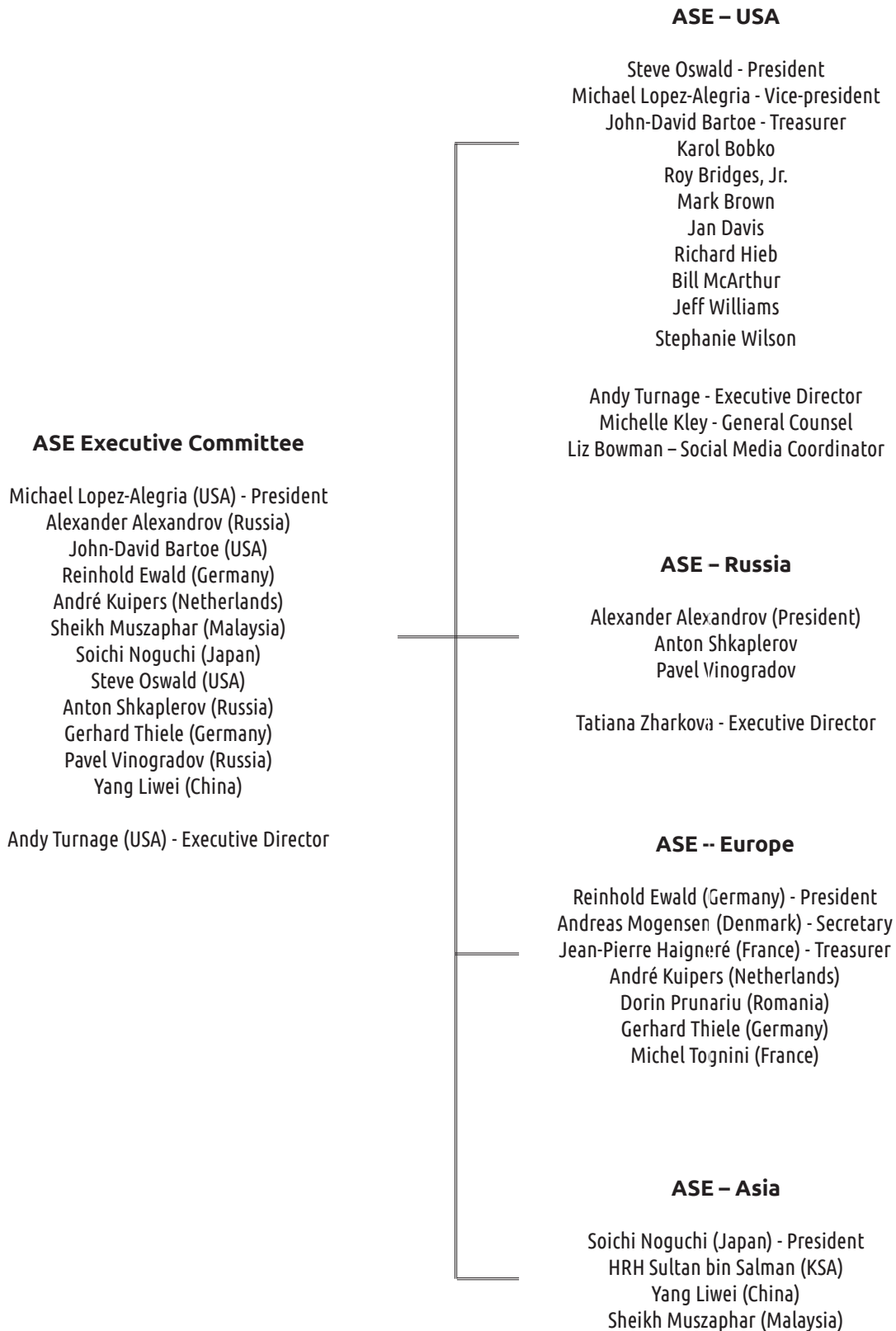
VI European Astronaut Reunion

Twelve astronauts and cosmonauts from eight European countries assembled for the sixth annual European Astronaut Reunion in Sopot, Poland. Hosted by Polish cosmonaut Miroslaw Hermaszewski, the three-day event included a regional assembly of European fliers, elections to the ASE-Europe Board of Directors, and a tree planting ceremony and public outreach events in the city of Gdansk.

2nd International Symposium on the Peaceful Use of Space Technology (Health)

ASE, in partnership with IAF, Space Foundation, the International Peace Alliance (Space) and CIIC Group co-hosted the 2nd International Symposium on the Peaceful Uses of Space Technology (Health) in Zhuhai, China. The Symposium offered a platform for expert exchange on medical innovation, research, and utilization and application of space technologies in international health markets.





\$25,000 + Greg Olsen
\$10,000 + John-David & Donna Bartoe, Tom & Liz Jones,
 Richard & Laetitia Garriott de Cayeaux
\$5,000 + John & Donna Fabian

Loren & Evelyn Acton, Anonymous Member, Tony & Janeen Antonelli, Jeff Ashby, Bo & Dianne Bobko, Charlie & Jackie Bolden, Bev & Vance Brand, Randy & Rebecca Bresnik, Roy & Benita Bridges, Mark & Lynne Brown, Bob & Barbara Cenker, Rich & Nancy Clifford, Eileen Collins & Pat Youngs, Bob & Pandora Crippen, Roger & Anne Crouch, Frank Culbertson, Jan Davis & Dick Richardson, Neil De Costa, Brian & Jan Duffy, Bonnie Dunbar, Reinhold & Monika Ewald, Drew & Indira Feustel, Mike & Lorrie Foreman, Owen & Eve Garriott, Richard & Laetitia Garriott de Cayeaux, Linda Godwin, Fred Gregory, Terry Hart, Rick Hauck & Susan Bruce, Susan Helms, Rick & Jeannie Hieb, Joan Higginbotham, Jeff & Barbara Hoffman, Peter & Rita Kanger, Mark Kelly & Gabrielle Giffords, Michelle Kley, Tim & Dawn Kopra, Kevin & Jeanne Kregel, André & Helen Kuipers, Mike Lopez-Alegria, Shannon Lucid, Bill & Cindy McArthur, Don & Janyce McMonagle, Barbara & Clay Morgan, Mike & Donna Mullane, Jim & Mary Newman, Danny & Marie Olivas, Steve Oswald & Mary Bono, Gary Payton, Bill & Colleen Readdy, Ken & Maureen Reightler, Dick & Lois Richards, Mario & Sue Runco, Rusty Schweickart & Nancy Ramsey, Brewster & Kathy Shaw, Loren & Diane Shriver, Kathy Thornton, Dick & Cody Truly, Charlie & Susan Walker, Carl & Pam Walz, George and Elisa Zamka.

Recognitions

Ad Astra Rocket Company and the International Space University for hosting ASE offices in Houston and Strasbourg, respectively.

Mary Bono, for her energy, support and wisdom.

Bonnie Dunbar & Dick Richards, for organizing the largest ASE Planetary Congress ever.

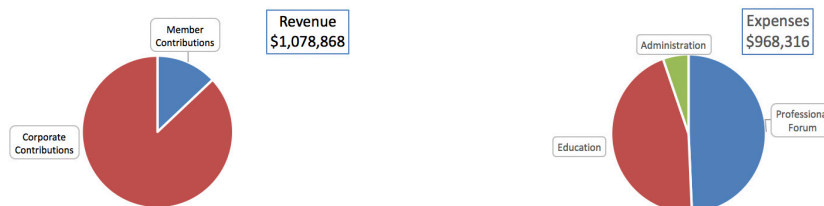
Michelle Kley, for her critical guidance and support as General Counsel.

Susan Kennedy and Sophie Zheng of Sophie S. Zheng PC for their valuable support.

Lois Richards, for her heroic effort organizing the XXXII Congress Companion Program.

Yuri Usachev, for the Perchatka.

George Abbey, Susan Anderson, Olga Bannova, Jeff Carr, Stephanie Castillo, Anya Ezhevskaya, Christian Feichtinger, Brett Griffin, Gwen Griffin & Al Saylor, Mark Geyer, Dillon Hall, Lance Isenhauer, Jennifer Kennedy, Jancy McPhee, Abigail Moren Re, Danica Remy, Jon Shearer, Bob Tweedy, Tatiana Zharkova, the hard working team at Space Center Houston, TTI, Carina Viehbock.



**Thank you to all of our individual and corporate contributors
 for your generous support for ASE in 2019!**



More than one hundred twenty astronauts and cosmonauts from nineteen countries gathered in Houston, Texas 14-18 October, 2019 for the XXXII ASE Planetary Congress. Hosted by former astronaut Bonnie Dunbar, the theme of the Congress was “Celebrating Apollo – Inspiring the Future”. The week-long event featured a variety of technical sessions, cultural events, and educational outreach across the state of Texas. The Title Sponsor for the XXXII Congress was the Texas A&M University.



The Congress officially opened on Monday October 14th at Space Center Houston, the official visitors' complex for the NASA Johnson Space Center. Astronaut and cosmonaut delegates, their spouses, local members of the international diplomatic corps, and distinguished guests were welcomed with remarks by NASA Johnson Space Center Director Mark Geyer, XXXII Congress Chair Bonnie Dunbar, ASE-USA president Steve Oswald, ASE president Michael Lopez-Alegria, Houston Mayor Sylvester Turner and Texas A&M University Chancellor John Sharp. During his remarks, Lopez-Alegria asked for a moment of silence in commemoration of the astronauts and cosmonauts who had passed away since the last Congress in Minsk.

Opening Ceremony also featured a recorded message and best wishes from the crew of Expedition 60/61 onboard the International Space Station, as well as a video message from NASA Administrator Jim Bridenstine. Lopez-Alegria concluded the ceremony by reading a welcome letter from US vice-president Mike Pence.

After lunch, the delegates conducted the Theme Session of the Congress. Titled “The Impact of Apollo, Today and Tomorrow” and chaired by ASE president Michael Lopez-Alegria, the session focused on the Apollo Program’s impact on developing technology for both space travel and public benefit and featured a panel discussion with retired NASA Flight Director and Director of Human Spaceflight Wayne Hale, former astronaut and Senior Research Scientist at Florida Institute for Human and Machine Cognition, Dr. Tom Jones and Dr. Jennifer Levasseur, curator at the Smithsonian National Air and Space Museum. The panel discussed their memories and public perceptions of the Apollo 11 moon landing, and how those perceptions might serve to enable or inhibit future endeavors in human deep space exploration.



The first technical session of the Congress discussed Medical



Challenges and Solutions Beyond Low Earth Orbit. Dr. Bonnie Dunbar opened the session by introducing the panel of speakers, including session co-chair Dr. John Charles, retired cosmonaut Oleg Kotov, Dr. Richard Jennings from the University of Texas Medical Branch, former astronaut Dr. Andre Kuipers, former JAXA astronaut Dr. Chiaki Mukai, Dr. Sue Bloomfield, professor at Texas A&M University, and Kat Coderre, Advanced Programs Engineer at Lockheed Martin. The panel discussed medical solutions, opportunities and challenges for human operations beyond low-earth orbit.

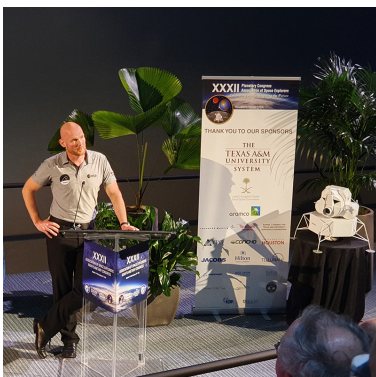
While the fliers were in session, the companions were treated to a tour of the Mission Control Center, the newly-refurbished historic Mission Control, and the Space Vehicle Mock-up Facility at the NASA Johnson Space Center. That evening fliers, guests and companions enjoyed an evening dinner at the nearby Villa Capri restaurant, featuring musical entertainment provided by astronaut band Max Q.

On Tuesday, the first technical session of the day featured “The Apollo Experience”. Held at NASA’s Johnson Space Center, Center Director Mark Geyer hosted a panel with Apollo 7 astronaut Walt Cunningham, Apollo 13 astronaut Fred Haise, George Abbey, former Director of Johnson Space Center and Apollo Flight Director Gerry Griffin. The panelists shared their experiences throughout the Apollo Program and offered their opinions on the next steps in space exploration, and the viability of current plans public and private sector plans for exploration beyond LEO.



After lunch with JSC employees, the fliers reconvened for the next technical session, “Forward to the Moon,” at Space Center Houston. The joint ASE-IAF session focused on international planning for human lunar exploration activities, including NASA’s Gateway Program and other essential components of the proposed architectures. IAF Executive Director Christian Feichtinger introduced Dan Hartman, NASA Gateway Program Manager at JSC, who expanded on NASA’s contribution to the deployment of Gateway components and their utilization as part of the Artemis Phase I Program. ESA astronaut Alexander Gerst, JAXA astronaut Koichi Wakata and CSA astronaut Jeremy Hansen briefed their respective agency contributions to the Gateway Program and the joint plans for exploring uncharted regions of the lunar surface.

The final technical session of the day, “The Next 50 Years: Challenges for Future Exploration” was chaired by former astronaut and ASE-USA president Steve Oswald. Dr. Haitham Abdulaziz Altwaijri of the Saudi Space Research Institute began with a presentation on the past accomplishments, present technologies, and future exploration goals of the Kingdom of Saudi Arabia. NASA Deputy Associate Administrator for Exploration, Stephen Clark, expanded upon Gateway’s activities to pursue exploration beyond Low Earth Orbit and the timetable of deliverables necessary to achieve a sustainable US presence on the moon by 2028.



The session ended with a panel entitled “The Nautilus Paradigm” Space Power and Propulsion For the Next 50 Years. Moderated by former astronaut, Dr. Franklin Chang Díaz, CEO, Ad Astra Rocket Company, the panel included Dr. Ronald Litchford, Principal Technologist, Game Changing Development Program, Office of the Chief Technologist, NASA HQ; Dr. Dennis Whyte, Nuclear Science & Engineering Professor and



Director, MIT Plasma Science and Fusion Center; Dr. David I. Poston, Nuclear Design and Risk Analysis Group, Los Alamos National Laboratory; and Capt. Stephen G. Bowen, Astronaut / US Nuclear NAVY. The group discussed high-power nuclear electric propulsion as the key enabler for sustainable human deep space exploration.

That evening, the delegates were hosted by Young President's Organization (YPO) and treated to a western barbeque dinner under the majestic Saturn V exhibit at JSC's Rocket Park.

Wednesday was the traditional Congress Community Day, and the astronauts and cosmonauts traveled to schools, universities, scientific institutions and space-related companies to visit with students, teachers and community leaders across the state of Texas.

ASE member André Kuipers's SpaceBuzz was a welcome addition to this year's Congress. SpaceBuzz is a non-profit educational program with the mission to inspire school children worldwide to become ambassadors of planet Earth through experiential learning, teaching them about space, planet Earth and STEM. The vehicle is packed with the latest VR and 4D technology, enabling children to experience the overview effect, just like astronauts experience in space.

On Thursday morning, the fliers assembled at the Rice University Baker Institute of Public Policy for a technical session focused on "Developing Exploration Technologies on the International Space Station". George Nelson, Manager of the Technology and Science Research Office, NASA ISS Program Office, presented an overview of the latest technological developments being tested on the ISS and how NASA plans to implement them into future exploration missions. James Broyan, NASA Advanced Exploration Systems Logistics Reduction Manager, briefed the shortcomings of previous and current waste management systems used on Shuttle and the ISS and introduced the new Exploration Toilet currently under development. Former astronaut Reinhold Ewald introduced the Stuttgart Photobioreactor Experiment, intended to utilize particular algae species that can efficiently convert CO₂ into breathable oxygen. He described the elements of the experiment and key results noted from trials conducted on the ISS.



Laura Shaw, NASA ISS Exploration Life Support Systems, detailed new functions and recent improvements to the Environmental Control and Life Support System (ECLSS), intended to be implemented for future expeditions to Mars. Eugene Schwanbeck, ISS Solar Array Project Manager elaborated on the detailed design for the new roll out solar array system (iROSA) and how iROSA will be deployed and installed on the ISS and future crewed vehicles.



After lunch, Chris Hansen, Manager of the NASA Extravehicular Office, opened the session “Space Suit Development for Future Exploration” with a discussion of NASA’s Exploration Extravehicular Mobility Unit (xEMU) and the plans for a first space test in March 2023. The session also featured a panel consisting of former astronaut Dan Burbank, Joe McMann, a retired NASA EVA suit engineer and NASA astronaut Kathleen Rubins, who fielded questions about the shortcomings of the current EMU used on the ISS. The panel also discussed improvements in the new xEMU suit that will enhance mobility, fit, and communications.



The second afternoon session, “Crew Safety and Technical Issues,” opened with a briefing by astronaut Mark Brown on the importance of advanced space traffic management (STM) for crew and vehicle safety. Dan Oltrogge, Director of AGI’s Center for Space Standards and Innovation, followed with a discussion of space situational awareness. Former astronaut Ed Lu, closed the session with a demonstration of a space surveillance network that can be utilized to predict near-misses and prevent vehicle/debris conjunctions.

Thursday ended with an Awards Dinner at the Museum of Fine Arts Houston, hosted by HRH Prince Sultan bin Salman, the Saudi Space Commission and Aramco. During the gala event, ASE awarded its Planetary Award, the Crystal Helmet, to Dr. Christopher Kraft, Jr. (posthumously), and a Leonov Medallion to John Sharp, Chancellor of Texas A&M University System.

Friday morning, the fliers gathered for regional chapter meetings and the General Assembly, re-electing Pavel Vinogradov and Andre Kuipers and welcoming David Saint-Jacques as a new member of the Executive Committee. Following the General Assembly, the Executive Committee met and elected Oleg Kotov to replace outgoing ASE president Michael Lopez-Alegria. Friday afternoon, the fliers and companions visited the nearby Lone Star Flight Museum for a tour featuring a variety of historic airplanes, and a Wings Over Houston airshow preview.

The Closing Ceremony and dinner took place Friday evening in Space Center Houston. The newly announced Executive Committee welcomed Oleg Kotov as the new ASE president and awarded the Perchatka - awarded by vote of the membership for the best technical presentation of the Congress - to Ed Lu for his presentation on space traffic management. ASE also recognized Lois & Richard Richards with a Leonov Medallion for their outstanding contributions to the organization of this year’s Congress. A special gift was presented to Congress Chair Bonnie Dunbar for her efforts in organizing this year’s Congress; Dunbar then read a proclamation from the Mayor of Houston, Sylvester Turner, recognizing October 16, 2019, as XXXII Planetary Congress Day. In the final official act of the XXXII Congress, Dunbar passed an ASE flag to Hungarian cosmonaut Bertalan Farkas, who invited ASE members to Budapest, Hungary in 2020 for the XXXIII Planetary Congress.

XXXII Congress Awards

ASE Planetary Award - Crystal Helmet

Dr. Chris Kraft, Jr. (posthumous)

Leonov Medallion

Chancellor John Sharp
Texas A&M University

Lois & Richard Richards

Perchatka (Best Technical Presentation)

Edward Lu

Photo credits: Dorin Prunariu

IN MEMORIAM



Быковский Валерий Фёдорович
Valery Bykovsky



Owen Garriott
Гарриотт Оуэн
ASE Distinguished Member



Sigmund Jähn
Зигмунд Ян
ASE Founder



Леонов Алексей Архипович
Alexei Leonov
ASE Founder
ASE Distinguished Member



Манаков Геннадий Михайлович
Gennadi Manakov

Richard Searfoss
Серфосс Ричард





2020

XXXIII Congress
September 27 – October 3
Budapest, Hungary

2021

XXXIV Congress
St. Petersburg, Russia

2022

XXXV Congress
Canada

2024

XXXVII Congress
Amsterdam, The Netherlands

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