

April 28 - May 2, 2003
Cape Canaveral, Florida

PROGRAM



**Linking the Past to the Future:
A Celebration of Space**



Chairman's Message

On behalf of this year's committee, we welcome you to the **Fortieth Space Congress**, with our theme "Linking the Past to the Future - a Celebration of Space." This is the 40th continuous year for the congress, commemorating the 40th anniversary of the Kennedy Space Center and the Centennial of Flight. The dedicated planning team has assembled a premier international conference aimed at the scientific community, the space industry workforce, educators and local supporting industries.



This year's program consists of four panel sessions and six paper sessions, concurrent student educational programs and exhibits. It begins with welcoming comments from the local NASA and USAF hosts, KSC Director Roy Bridges, and 45th Space Wing Commander Brig. Gen. Greg Pavlovich. Setting the mood and central theme for the congress, the Honorable Sean O'Keefe, NASA Administrator will deliver our keynote address to complete the opening ceremonies. We are also delighted to have the 2002 Nobel Laureate in Physics, Dr. Riccardo Giacconi, deliver the congress scientific highlight speech, discussing the status and discoveries of NASA's great observatories.

Keeping with our theme, a panel and paper session each will address the history of the space program and flight as conveyed by the space pioneers who created the rich heritage we enjoy. Panelists and paper session presenters will provide details of current and ongoing science and exploration programs, and their benefits to mankind. In every case, we were fortunate to capture the decision makers and leaders of these programs to serve on the congress panels and sessions. Attendees will notice new ideas in the Educational/Scientific Showcase area, where each day special events, speakers and activities are planned.

To serve as our link to the future, a panel and a number of paper sessions will enlighten and provide a preview of what the future may look like. We have invited timely and provocative luncheon speakers each day who will continue with our theme by outlining current and future space initiatives. For our gala evening event, we are honored to have Mr. Dennis Tito, CEO and Chairman of the Board of Wilshire Associates Inc., who will share his experiences while training and becoming the first private citizen to visit the International Space Station.

Please join us at the Space Congress as we celebrate space and these milestones, and help us '*Link the Past to the Future.*'

A handwritten signature in cursive script that reads "Kevin Hoshstrasser".

Kevin Hoshstrasser
General Chair
Fortieth Space Congress

Information

Headquarters/Registration

Headquarters for the **Fortieth Space Congress** is the Radisson Resort at the Port, Bonaire Room. There you may pick up your registration packages and other Space Congress materials and tickets for Panel/Paper sessions, luncheons and the gala. Space Congress memorabilia are also available at the Convention Center lobby. Registration will be open from 12:00 - 4:00 p.m. on Monday, April 28 and 7:30 a.m. - 5:00 p.m. from Tuesday through Thursday.

PACKAGE REGISTRATION	\$250.00
(Includes first five items listed below)	
Registration	140.00
Tuesday Luncheon	30.00
Wednesday Luncheon	30.00
Wednesday Gala	75.00
Thursday Luncheon	30.00
Single Session.....	25.00
Proceedings Hard Copy (Not in Package)	80.00
Proceedings CD-Rom (Not in Package)	50.00
Golf (Not in Package)	50.00
Gala Corporate Table (10)	1,000.00

ALL SPACE CONGRESS ACTIVITIES WILL BE HELD AT THE RADISSON RESORT AT THE PORT.

Package registration will save you money; however, each item may be purchased individually at the listed price. Telephone contact during the Space Congress can be made through the Radisson Resort at the Port, (321) 784-0000, or direct, (321) 799-4845.

Press Room

The press facility is located in the Bermuda Room in the Radisson Resort at the Port. The press facility is open from 12 noon to 5:00 p.m. on Monday and from 8:00 a.m. to 5:00 p.m. on Tuesday, Wednesday and Thursday, and 8:00 a.m. to 12:00 p.m. Friday. The telephone number for the press facility is (321) 799-9771, (fax number: (321) 799-9772).

Message/Locator Assistance

The sponsoring organization, the Canaveral Council of Technical Societies (CCTS), maintains a message locator desk in the Convention Center with telephone (321) 799-4846, for the convenience of Space Congress participants. It also assists attendees by maintaining a message board. Registrants who wish to leave lodging and local phone information can do so by turning in locator forms to the CCTS Message/Locator Desk.

Proceedings

The Proceedings of the **Fortieth Space Congress** may be ordered at the Registration Desk in the Radisson Resort at the Port during the Space Congress. After the close of the Space Congress, Proceedings will be mailed to those who purchased copies.

Exhibits

The Exhibit Hall will feature displays and demonstrations from over 60 exhibitors. It will include exhibits on Space Shuttle, International Space Station, computer graphics demonstration, and other aerospace-related topics. The Exhibit Hall will be open to the public in the Radisson Resort at the Port on the following schedules: Tuesday - 11:00 a.m. to 7:00 p.m.; Wednesday - 11:00 a.m. to 6:00 p.m.; and Thursday - 9:00 a.m. to 3:00 p.m.

Exhibitors

Alcatel Vacuum Products
American Society of Mechanical Engineers—Canaveral Section
ATK Thiokol Propulsion
The Boeing Company
Canaveral Port Authority
CMC Electronics Cincinnati
Command Technologies, Inc.
Comprehensive Health Services
Computer Sciences Raytheon
Harris Corporation
Honeywell Defense & Space Electronic Systems
InDyne, Inc.
ITT Industries
Jacobs Sverdrup
Jet Propulsion Laboratory
Johnson Controls, Inc.
Jones Edmunds and Associates, Inc.
Lockheed Martin
NASA/Goddard Space Flight Center – Hubble Space Telescope
Naval Ordnance Test Unit – Cape Canaveral
Orbital Sciences Corporation
Pratt Whitney Space Propulsion
RTI International
SAIC (Science Applications International Corp.)
SKF USA, Inc.
Swales Aerospace
Technological Research & Development Authority (TRDA)
Tybrin Corporation
United Paradyne Corporation
45th Space Wing

Technical Societies and Universities

AFCEA
American Society of Safety Engineers
American Society for Quality
Association for the Advancement of Cost Engineering International
Barry University
Cape Canaveral Chapter American Society for Quality
Embry Riddle Aeronautical University
Florida Solar Energy Center
International Society of Logistics Engineers
National Management Association – FSCC
Society of Technical Communication
Warner Southern College
Webster University

Youth Science Fair

Regional Youth Science Fair displays and demonstrations will be open to the public Tuesday through Thursday, in the Exhibit Hall Annex in the Radisson Resort at the Port. Exhibits will be judged and awards presented on Thursday evening, May 1, at the beginning of the "Evening With the Astronauts" event.

Space Congress Golf Tournament

Golfers will be able to enjoy a tournament at the Cocoa Beach Country Club on Friday, May 2, 2003.

The tournament will be a Scramble format, as in the past. Foursomes may sign-up if they provide a combined total, certifiable handicap of 58 or higher.

NOTE: Only one player with a handicap of 10 or lower allowed per team. Singles that sign up will be paired with teams that are not filled. A maximum of 144 players will be registered on a first-in basis.

Entry fee is \$50 per player or \$200 per 4-person team.

Included in the entry fee: Green fees - 1/2 cart - Bar-B-Que Lunch - Prizes
Schedule of events is as follows:

10:00 a.m.	Check-in at course begins
11:00 a.m.	Lunch
12:30 p.m.	Shotgun Start

Contact: Lisa Ulbricht (321) 799-5563

Pioneers' Annual Banquet

The Pioneers' Banquet 2003 will be held on Friday, May 2, at the Officers' Club, Patrick Air Force Base.

<i>Social Hour:</i>	6:30 p.m.
<i>Dinner:</i>	7:30 p.m.
<i>Speaker:</i>	8:30 p.m.

Registration is in the Convention Center at the Radisson Resort at the Port, and 5:30 to 6:30 p.m. at the Officers' Club on May 2.

Contact: John Van Cleve (321) 727-2981

Canaveral Council of Technical Societies (CCTS) Member Societies

Association for the Advancement of Cost Engineering International
The Air Force Association

Armed Forces Communications and Electronics Association

American Institute of Aeronautics & Astronautics

American Institute of Chemical Engineers

American Meteorological Association

American Society of Civil Engineers

American Society of Heating, Refrigeration and Air Conditioning Engineers

American Society for Industrial Security

American Society of Mechanical Engineers

American Society for Quality

American Society of Safety Engineers

American Society for Training and Development

Florida Engineering Society
Florida Space Business Roundtable
Human Factors & Ergonomics Society
Institute of Electrical and Electronic Engineers, Canaveral Section
Institute of Electrical and Electronic Engineers, Melbourne Section
International Council on System Engineering, Space Coast Chapter
International Society of Logistics Engineers, Space Coast Chapter
Missile, Space, & Range Pioneers, Inc
NASA Alumni League
National Contract Management Association
National Space Club - Florida Committee
Project Management Institute - Space Coast
Society of American Military Engineers
Society of Manufacturing Engineers
Society for Technical Communications, SpaceTech Chapter
Society of Women Engineers

Associate Members

Association for Quality and Participation
Brevard Council of Teachers of Mathematics
National Management Association, Florida Space Coast Council
USAF Space & Missile Museum Foundation

Advisor Organizations

Brevard Community College
Embry-Riddle Aeronautical University
Florida Institute of Technology
Florida Solar Energy Center
Florida Space Research Institute
University of Central Florida

Many of the societies will have educational/promotional brochures/ information on display at the Radisson Resort at the Port, Convention Center. Attendees are invited to stop by and review this material.

Sponsors

Canaveral Council of Technical Societies
The Boeing Company
Jacobs Sverdrup
Air Products, Inc.
Space News
Florida Today
Space Shirts

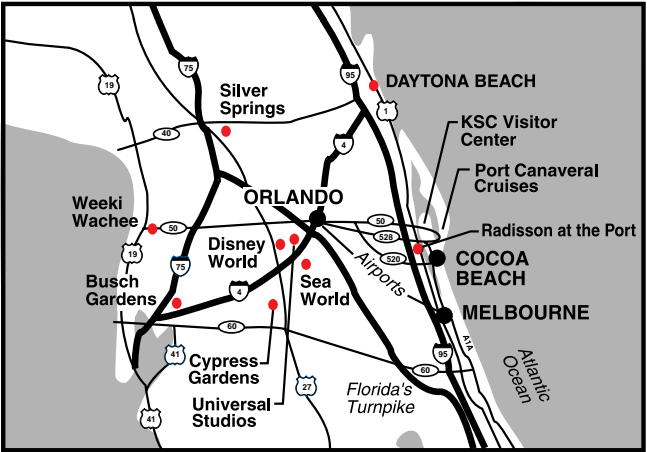
Attraction Centers

The Space Coast is among the most popular tourist destinations in the world, featuring a unique blend of high tech and natural attractions.

The **Kennedy Space Center Visitor Complex** offers visitors an unprecedented insider's view of the exciting past, present and future of our nation's space program. **The Astronaut Hall of Fame** showcases the personal side of spaceflight with astronaut artifacts and memorabilia. **Brevard Community College** is the home to one of the world's premier planetariums with a variety of public shows and presentations.

The Space Coast is home to one of the nation's busiest cruise terminals featuring 7 and 4 day cruises to the Bahamas and the Caribbean aboard Disney, Holland America, Royal Caribbean and Carnival cruise lines. Additionally, there are daily casino cruises.

The area is also a natural paradise with over 72 miles of beaches and some of the best fresh and saltwater fishing in the nation. Not to mention that the Space Coast is only an hour away from some of the world's most popular tourist attractions, including Walt Disney World, Universal Studios and Sea World.



Program

MONDAY, APRIL 28

EXHIBITORS RIBBON CUTTING CEREMONY AND RECEPTION (Invitation only)
(5:30 P.M. TO 8:00 P.M.)

ANNUAL CONGRESSIONAL DINNER
(7:30 P.M. TO 9:30 P.M.)

Speakers: *Honorable Tom Feeney -*
NASA Now and the Future
Honorable Dave Weldon-
Military/Defense Programs Now and the Future

Annual Congressional Dinner hosted by the Florida Space Business Roundtable. U.S. Rep. Feeney and U.S. Rep. Weldon will discuss space/military/defense policy issues under consideration in Washington, D.C. Cost is \$ 35.00. RSVP: www.spacecoastedc.org, or call 321-638-2000, or mail check to FSBR, P.O. Box 273, Cape Canaveral, Florida 32920.

TUESDAY, APRIL 29

WELCOME CEREMONY
(8:30 A.M.)

Introductions and welcome messages from Brig. Gen. J. Gregory Pavlovich, Commander, 45th Space Wing and Director, Eastern Range, Patrick A.F.B. and Roy D. Bridges, Jr., Director, Kennedy Space Center.

KEYNOTE ADDRESS
(8:45 A.M. TO 9:15 A.M.)

Radisson Resort at the Port, Convention Center

Keynote
Speaker: *Honorable Sean O'Keefe, NASA Administrator*

Sean O'Keefe was appointed by the President as the 10th Administrator of the National Aeronautics and Space Administration on December 21, 2001. As Administrator, O'Keefe leads the NASA team and manages its resources, as NASA seeks to advance exploration and discovery in aeronautics and space technologies.

O'Keefe joined the Bush Administration on inauguration day and served as the Deputy Director of the Office of Management and Budget and Deputy Assistant to the



President until December 2001, overseeing the preparation, management and administration of the Federal budget and government wide-management initiatives across the Executive Branch.

Prior to joining the Bush Administration, O'Keefe was the Louis A. Bantle Professor of Business and Government Policy, an endowed chair at the Syracuse University Maxwell School of Citizenship and Public Affairs, Director of National Security Studies, a partnership of Syracuse University and Johns Hopkins University, and Professor of Business Administration and Assistant to the Senior Vice President for Research and Dean of Pennsylvania State University.

Appointed as the Secretary of the Navy in July 1992 by President George Bush, O'Keefe previously served as Comptroller and Chief Financial Officer of the Department of Defense, United States Senate Committee on Appropriations staff, and was Staff Director of the Defense Appropriations Subcommittee.

In 1993, President Bush and Secretary Cheney presented him the Distinguished Public Service Award. He was also the recipient of the Department of the Navy's Public Service Award in December 2000. Sean O'Keefe was the 1999 faculty recipient of the Syracuse University Chancellor's Award for Public Service. He is the author of several journal articles, contributing author of "Keeping the Edge: Managing Defense for the Future," released in October 2000, and in 1998, co-authored "The Defense Industry in the Post-Cold War Era: Corporate Strategies and Public Policy Perspectives."

Sean O'Keefe earned his Bachelor of Arts in 1977 from Loyola University in New Orleans, Louisiana, and his Master of Public Administration degree in 1978 from The Maxwell School.

SCIENCE HIGHLIGHTS (9:15 A.M. TO 9:45 A.M.)

Topic: Summarizing the breakthrough discoveries of NASA's Great Observatories, including Hubble, Chandra and SIRTf.

Speaker: *Dr. Riccardo Giacconi, Research Professor Johns Hopkins University and President, Associated Universities, Inc.*

Riccardo Giacconi is an astronomer with a long history and expertise in deep surveys. Dr. Giacconi was the principal investigator of the program which discovered the first X-ray stars and the X-ray background in the 1960s and conceived of and led the implementation of the Uhuru and Einstein X-ray Observatories in the 1970s. He is the principal investigator for the ultradeep survey with Chandra that has already obtained the deepest X-ray exposures to date with a million-second observation. He is also



participating in the follow-up optical work in this field. He is an expert in the analysis and interpretation of astronomical data.

Dr. Giacconi has authored technical books on X-ray astronomy and has written over 180 articles on astrophysical topics. He shared the prestigious Wolf Prize in Physics for his pioneering research in X-ray astrophysics. In 2002, Giacconi was awarded the Nobel Prize in Physics for pioneering contributions to astrophysics, which have led to the discovery of cosmic X-ray sources.

Dr. Giacconi attended the University of Milan and received his Ph.D. in cosmic ray physics. He did post-graduate studies at the University of Milan, moved to the United States to continue studies at Indiana University and Princeton University.

PANEL SESSION I (10:00 A.M. TO 11:30 A.M.)

Radisson Resort at the Port, Convention Center

Space Science Overview

A high level summary of the current state of NASA science programs, as assessed by the leaders and decision makers of NASA's Chief Scientist, Earth Science, Life Science and Space Science organizations.

*Panel Chair: Dr. Shannon W. Lucid,
NASA Chief Scientist*

Selected by NASA in January 1978, Dr. Lucid became an astronaut and qualified for assignment as a mission specialist on Space Shuttle flight crews. Some of her technical assignments have included: the Shuttle Avionics Integration Laboratory; the Flight Software Laboratory, in Downey, California, working with the rendezvous and proximity operations group; Astronaut Office interface at Kennedy Space Center, Florida, participating in payload testing, Shuttle testing, and launch countdowns; spacecraft



communicator in the JSC Mission Control Center during numerous Space Shuttle missions; Chief of Mission Support; Chief of Astronaut Appearances. A veteran of five space flights, Dr. Lucid has logged 5,354 hours in space and is a commercial, instrument and multi-engine rated pilot. Dr. Lucid holds an international record for the most flight hours in orbit by any non-Russian, and holds the record for the most flight hours in orbit by any woman in the world. Dr. Lucid was recently selected as NASA's Chief Scientist and will be stationed at NASA Headquarters with responsibility for developing and communicating the agency's science and research objectives to the outside world.

Dr. Lucid received a Bachelor of Science Degree in Chemistry, Master of Science and Doctor of Philosophy Degrees in

Biochemistry from the University of Oklahoma. Dr. Lucid most recently was awarded the Congressional Space Medal of Honor by the President of the United States. She is the first and only woman to have earned this prestigious award.

Panel Members: Dr. Mary Cleave, Deputy Associate Administrator, Office of Earth Science
Dr. Howard Ross, Deputy Associate Administrator, Office of Biological & Physical Research
Mr. Chris Scolese, Deputy Associate Administrator, Office of Space Science

EXHIBITS & STUDENT SCIENCE FAIR (11:00 A.M. TO 7:00 P.M.)

Radisson Resort at the Port, Convention Center Exhibit Hall

LUNCHEON (12:00 NOON TO 1:00 P.M.)

Radisson Resort at the Port, Convention Center

Topic: Mars Exploration Program, Current and Future

Speaker: Orlando Figueroa
Director, NASA Mars Exploration Program Office

Mr. Figueroa was born in San Juan, Puerto Rico on September 9, 1955. He obtained a B.S. Degree in Mechanical Engineering from the University of Puerto Rico, Mayaguez Campus in 1978, and completed multiple advanced studies in Mechanical Engineering at the University of Maryland.

In May 2001, Mr. Figueroa was appointed to the position of Director for the Mars Exploration Program in the Office of Space Science at NASA Headquarters. In this position he has overall responsibility for the robotic exploration of Mars.

Throughout his career, Mr. Figueroa has received numerous awards for Group Achievement and Outstanding Performance in engineering and management. He was awarded the NASA Outstanding Leadership Medal for the management of the SMEX Project during the successful development and launch of the Solar Anomalous and Magnetospheric Particle Explorer. In 1994, he received the Community Stars Award from the Maryland Science Commission for his work and support of innovative education programs between NASA, industry and Maryland Schools. He is the author of several technical publications in the field of cryogenics and the SMEX missions.



PANEL SESSION II (1:30 P.M. TO 4:30 P.M.)

Radisson Resort at the Port, Convention Center

The Impact of Space Observatories on Astronomy

A special panel session dedicated to the exciting observations and discoveries of NASA's Great Observatories, including Hubble, Chandra and SIRTf.

*Panel Chair: Dr. Riccardo Giacconi, Research Professor
Johns Hopkins University and President,
Associated Universities, Inc.*

*Panel Members: Dr. Steve Beckwith, Director, Space
Telescope Science Institute
Dr. Holland Ford, Principal Investigator
Professor, Johns Hopkins University
Dr. Mario Livio, Head of Science Division,
Space Telescope Science Institute
Dr. Harvey Tananbaum, Director, Chandra
X-ray Science Center, Harvard-
Smithsonian Center for Astrophysics,
Dr. B. Thomas Soifer, Director, SIRTf
Science Center, California Institute of
Technology*

WEDNESDAY, APRIL 30

PANEL SESSION III (8:30 A.M. to 11:00 A.M.)

Radisson Resort at the Port, Convention Center

Access to Space: L.E.O. & Beyond

An opportunity to hear the vision and direction of future space flight efforts, as described by the responsible policy makers from NASA, USAF and industry decision makers themselves.

*Panel Chair: Mr. Fred Gregory
NASA Deputy Administrator*

Frederick D. Gregory is the Deputy Administrator of NASA. He serves as the chief operating officer for the Agency and reports directly to NASA's Administrator. He is responsible for directing and managing many of the programs as well as the day-to-day operations and activities at NASA.

Prior to becoming Deputy Administrator, Mr. Gregory served as the Associate Administrator for Space Flight and was responsible for overseeing the management of the International Space Station; Space



Shuttle Operations; Space Access using Expendable Launch Vehicles for commercial launch services; Space Communications; and Advanced Programs.

Mr. Gregory has extensive experience as an astronaut, test pilot, and manager of flight safety programs and launch support operations. As a NASA astronaut, he logged 455 hours in space: as pilot for the Orbiter Challenger, STS-51B, as spacecraft commander aboard Discovery, STS-33 and as spacecraft commander aboard Atlantis, STS-44.

Mr. Gregory retired as a Colonel in the United States Air Force in 1993 after logging 7,000 hours in more than 50 types of aircraft. Mr. Gregory holds a Bachelor of Science Degree from the United States Air Force Academy and a Master's Degree in Information Systems from George Washington University.

*Panel Members: John Rogacki, NASA Deputy Associate Administrator, Space Transportation
Paul Piscopo, Special Assistant, DDR&E for National Aerospace Initiative
Adrian Laffitte, Director, Atlas Program, Lockheed - Martin
Mike Mott, Vice President, Boeing
NASA Systems
Gary Martin, NASA Space Architect*

EXHIBITS

(11:00 A.M. TO 6:00 P.M.)

Radisson Resort at the Port, Convention Center Exhibit Hall

SCIENCE FAIR

(12:00 NOON TO 6:00 P.M.)

Radisson Resort at the Port, Convention Center Exhibit Hall

LUNCHEON

(11:30 A.M. TO 1:00 P.M.)

Radisson Resort at the Port, Convention Center

Topic: International Space Station Program, Current and Future

Speaker: *General Michael C. Kostelnik
USAF Retired
NASA Deputy Associate Administrator,
Space Shuttle & International Space Station*

Gen. Kostelnik's responsibilities include the corporate-level management of program safety, budget, performance and schedule requirements for the International Space Station and the Space Shuttle program.

Gen. Kostelnik has more than 25 years of hands-on experience in research, development, testing, and evaluation of leading edge aerospace systems. He brings to NASA broad



experience and in-depth expertise in the management of high-risk aerospace development test programs and operations safety.

Until his retirement, Gen. Kostelnik was the Commander of the Air Force Development and Test Center and Air Armament Center at Eglin Air Force Base in Florida. Responsible for two of the Air Force's largest installations, he was also the flight manager for high-risk flight operations, which tested weapon systems. From late 1995 through 1997, Kostelnik was Vice Commander and Director, Plans and Programs, of the Air Force Materiel Command, Wright Patterson Air Force Base in Ohio.

He holds a bachelor's degree in Mechanical Engineering from Texas A&M University, a master's degree in Industrial Management Engineering from the University of Iowa, and has completed extensive advanced program and executive management training at a variety of institutions, including the National Defense University, the Goldratt Institute, and Johns Hopkins University.

PAPER SESSION I (1:30 P.M. TO 5:00 P.M.)

A. LEARNING ABOUT LIFE IN SPACE

Salon I

Session Chair: *Dr. John-David Bartoe,
Research Manager for the
International Space Station (ISS),
NASA's Johnson Space Center*

Session Organizer: *Barry Meneghelli,
Dynacs Corp.*

1. LEARNING ABOUT LIFE ON SPACE STATION

*John Uri, NASA/ JSC
Cynthia Haven, NASA/ JSC
Gary Jahns, NASA Ames*

2. NEW CANCER THERAPIES AND IMPROVED DRUG DELIVERY FROM MICROGRAVITY RESEARCH

Dr. Dennis Morrison, NASA Johnson Space Center

3. THE THIRD DIMENSION: GROWING 3-D TISSUES IN SPACE

John Love, NASA Johnson Space Center

4. GROWING BETTER PLANTS IN SPACE

*Howard G. Levine, Dynamac Corporation
Joey H. Norikane, Dynamac Corporation
Dona T. Rouzan, Dynamac Corporation
Mark D. Best, Vector CAD
Trevor Murdock, The Bionetics Corp
Kevin Burtness, The Bionetics Corp*

5. HANDS-OFF FARMING IN SPACE

*Dr. Chan Ham, University of Central Florida
Hea Choi, University of Central Florida
Roger Johnson, University of Central Florida*

6. HOW DO YOU MAKE A ZERO-G BIOLOGY MICROSCOPE?

Rolando Branly, Broward Community College

E. Howard, Broward Community College

R. Friedfeld, Broward Community College

7. LEARNING MORE ABOUT THE MARTIAN SOIL

Dr. James Mantovani, Florida Institute of Technology

Dr. Carlos Calle, NASA Kennedy Space Center

8. DESIGNING GENES

Michael Boniface, Satellite High School

B. SPACEPORT AND RANGE TECHNOLOGY - TECHNOLOGY DEMONSTRATIONS

Jamaica Room

*Session Chairs: Cris Guidi, Program Manager,
Spaceport Technology Development,
NASA/KSC*

*Darin Skelly, Program Manager,
Advanced Range Technology Development,
NASA/KSC*

*Session Organizer: Vickie Felkins,
All Points Logistics*

1. SPACE BASED COMMUNICATIONS

Dr. James Simpson, NASA/ KSC

Erik Denson, NASA/ KSC

Lisa Valencia, NASA/ KSC

Richard Birr, Dynacs Inc

2. MOLNIYA ORBIT FOR GROUND TO SATELLITE LASER COMMUNICATIONS

Russell Thornton, Aerospace Corporation

Ronald Phillips, Aerospace Corporation

3. INTEGRATING REUSABLE LAUNCH VEHICLE OPERATIONS INTO THE NATIONAL AIRSPACE SYSTEM

Rodney Davis, Command and Control Technologies

4. VIRTUAL TEST BED ENVIRONMENT FOR SPACEPORTS

Dr. Luis Rabelo, University of Central Florida

Dr. Jorge Bardina NASA/ Ames Research Center

Barbara Brown, NASA / Ames Research Center

5. ELECTRONIC NOSE FOR SPACE PROGRAM APPLICATIONS

Rebecca Young, NASA/ KSC

Bruce Linnell, ASRC

William Butler, ASRC

6. MEMS: OPTIMIZATION OF A NOVEL APPLICATION OF KOH SILICON ETCHING TO THE CONSTRUCTION OF SINGLE DEGREE OF FREEDOM OPTICAL MICROMIRRORS

Steven Seidel, Astronaut High School

C. SPACEPORT BALLISTIC SAFETY PROGRAM

Martinique Room

*Session Chair: Lt. Col. Rembert Schofield,
114th Range Flight, 45th Range Squadron,
USAF*

Session Organizer: Becky Denis, NASA/KSC

1. AIR MONITORING FOR HAZARDOUS GAS DETECTION

Dr. C Richard Arkin, Dynacs Inc

2. RELIABILITY AND SAFETY PREDICTION METHODS FOR MISSION AND SPACEPORT OPERATION

*Dr. Marianna Pensky, University of Central Florida
Astrid Heard, NASA/ KSC*

3. COMPARISON OF SURFACE RESISTIVELY AND TRIBOELECTRIC CHARGE GENERATION CHARACTERISTICS OF MATERIALS

*Ellen Groop, NASA/ KSC
A.W. Nowicki, Dynacs Inc
C. I. Calle, NASA/ KSC
C.R. Buhler, Swales Aerospace
J.G. Mantovi, Florida Institute of Technology*

4. INTERFEROMETER FOR SPACE STATION WINDOWS

Greg Hall, NASA/ KSC

5. AN ANALYSIS OF WORLDWIDE SPACE LAUNCH FAILURES, 1980 – 2002

Robert Wayne Eleazer, ACTA, Inc

6. NEURONAL EXPRESSION OF CD22

Anant Patel, Astronaut High School



40TH SPACE CONGRESS GALA (6:30 P.M. TO 9:00 P.M.)

Radisson Resort at the Port, Convention Center

Speaker: **Dennis A. Tito,**
CEO Wilshire Associates
First ISS Space Tourist

Mr. Tito, as one of the founders of Wilshire in 1972, was among the first to apply then-new computing technologies to the investment industry. He had previously applied such computing technologies at Jet Propulsion Laboratory where he worked to help plot the trajectories for the Mariner spacecraft missions to Mars. Mr. Tito is credited with helping to develop the field of quantitative investment analysis that uses mathematical tools to analyze market risks. Under his direction, Wilshire developed the Wilshire 5000 index, the first asset/liability models for pension funds, the first U.S. equity style metrics work, and many other "firsts" as Wilshire grew and developed into a firm of over 300 employees serving the investment needs of institutional clients around the world.



Mr. Tito supports and is actively involved in many charitable and civic causes including the building of a new cancer research lab at the University of California, Los Angeles. He formerly served as President of Commissioners for the Department of Water and Power of Los Angeles.

In the Spring of 2001 Mr. Tito became the first paying traveler aboard the International Space Station.

Mr. Tito received a B.S. from New York University College of Engineering in astronautics and aeronautics, and an M.S. in Engineering Science from Rensselaer Polytechnic Institute. He also completed course requirements for a Ph.D. in Finance from the Anderson School, University of California, Los Angeles.

THURSDAY, MAY 1

PANEL SESSION IV (8:30 A.M. TO 11:00 A.M.)

Radisson Resort at the Port, Convention Center

Linking the Past to the Future

An interesting and informal discussion marking the 40 years of history at the Kennedy Space Center, the 100 years of flight and thoughts on what the next decade will bring.

*Panel Chair: JoAnn Morgan, Director,
External Relations & Business
Development, NASA, KSC*

JoAnn H. Morgan is the Director of the External Relations and Business Development Directorate at NASA's John F. Kennedy Space Center. Prior to being assigned to this position, she was the KSC Associate Director for Advanced Development and Shuttle Upgrades. In this capacity, she provided leadership for the Center's support to Shuttle flight systems upgrades and for creating a customer-driven environment and new opportunities for the Kennedy team to participate in cutting-edge technology development and application.



Mrs. Morgan entered the federal workforce as a University of Florida student trainee with the Army Ballistic Missile Agency and worked for NASA on the Mercury, Gemini, Apollo, Skylab, and Apollo-Soyuz Programs. Morgan then became one of the KSC team developing the Space Shuttle launch processing system central data subsystem, which was initially used for the first launch of the Orbiter Columbia. Following this, she served in managerial positions including Division Chief and Deputy Director, Expendable Launch Vehicles; Director of Payload Projects and Ground Operations; Director for Safety and Mission Assurance with overall responsibilities for the KSC safety, reliability, maintainability, quality, and mission assurance programs.

Mrs. Morgan was educated at the University of Florida in Gainesville, and received a degree in Mathematics at Jacksonville State University in Alabama. She attended Stanford University in California where she obtained her Master of Science degree in Management.

*Panel Members: John Young, Associate Director,
Johnson Space Center
Gunther Wendt, Pad Leader (retired)
Rockwell International
James T. Rose, Former Assistant
Administrator for Commercial Programs
Doug Cooke, Space Architecture Technical
Manager
Gregg Maryniak, Executive Director, X-Prize*

EXHIBITS AND STUDENTS SCIENCE FAIR (9:00 A.M. to 3:00 P.M.)

Radisson Resort at the Port, Convention Center Exhibit Hall

LUNCHEON (11:30 A.M. TO 1:00 P.M.)

Radisson Resort at the Port, Convention Center

Topic: Space Launch for the Warfighter

Speaker: *Brig. Gen. William L. Shelton, Director,
Air and Space Operations,
Headquarters, Air Force Space Command*

Brig. Gen. William L. Shelton is Director, Air and Space Operations, Headquarters Air Force Space Command, Peterson Air Force Base, Colo. General Shelton oversees the development of policy and guidance to conduct the command's space and intercontinental ballistic missile operational missions.

General Shelton entered the Air Force in 1976 as a graduate of the U.S. Air Force Academy. He has served in various assignments, including research and development testing, space operations and staff work. The general has commanded at the squadron, group and wing levels, and served on the staffs at major command headquarters, Air Force headquarters and the Office of the Secretary of Defense. Prior to assuming his current position, General Shelton was the Director of Plans and Programs at Headquarters Air Force Space Command.

General Shelton has a Bachelor of Science Degree in Astronautical Engineering, U.S. Air Force Academy, Colorado Springs, Colo., a Master of Science Degree in Astronautical Engineering, U.S. Air Force Institute of Technology, Wright-Patterson AFB, Ohio and a Master of Science Degree in National Security Strategy, National War College, Fort Lesley J. McNair, Washington, D.C.



PAPER SESSION II (1:30 P.M. to 4:30 P.M.)

A. EDUCATION AND HISTORY – 100TH ANNIVERSARY OF FLIGHT

Martinique Room

Session Chair: *Dr. Kenneth J. Lipartito,
Chair, Department of History,
Florida International University*

Session Organizer: *Aimee Bergquist, NASA/KSC*

**1. REVISITING THE DAWN OF THE US SPACE PROGRAM:
APPLICATION OF VIRTUAL TECHNOLOGY TO SPACE
HISTORY**

Dr. Lori Walters, University of Central Florida

**2. LOOKING BACKWARD/LOOKING FORWARD: SPACE
FLIGHT AT THE TURN OF THE NEW MILLENNIUM**

Dr. Roger D. Launius, Smithsonian Institution

3. HISTORY OF THE SHUTTLE LANDING FACILITY

Elaine E. Liston, InDyne, Inc

Dr. Dawn Elliot, NASA/ KSC

**4. NAVIGATING THE AIR: A HISTORY OF FLIGHT BEFORE THE
WRIGHT BROTHERS**

Henry Dethloff, Professor Emeritus, Texas A&M University

5. INTERNATIONAL SPACE UNIVERSITY

Milos Krmelj, International Space University

**6. PROCESS REGULATING ZOOXANTHELLAE DENSITY IN
CONDYLACTIS GIGANTEA: HALOBIONT EXPOSURE TO
IRRADIANCE AND TEMPERATURE GRADIENTS**

Carrie Miller, Palm Bay High School

**B. BUILDING OF A SPACEPORT –
BUSINESS, LEGAL AND POLICY**

Jamaica Room

*Session Chair: Dr. John Hudiburg,
NASA, KSC External Relations and
Business Development*

*Session Organizer: Marilou Richardson,
United Space Alliance*

1. 321 LIFTOFF

Henry Dethloff, Professor Emeritus, Texas A&M University

2. LEGACY AND EMERGENCE OF SPACEPORT TECHNOLOGY

Stanley Starr, Dynamac, Inc

3. U. S. CIVIL SPACE POLICY

Roelof Schulling, NASA/ KSC

4. THE EMERGENCY OF INLAND SPACEPORTS

*Maj. Gen (USAF-Ret) Jay Edwards, Oklahoma Space Industry
Development Authority*

5. SPACE FINANCE

*Frank DiBello, Florida Commercial Space Financing
Corporation*

6. USTDC PARTNERING TO ACHIEVE THE SPACEPORT

William Franklin, NASA/ KSC

Scott Study, ASRC

C. ISS UTILIZATION

Salon I

*Session Chair: Scott Vangen,
NASA, KSC International Space
Station and Payloads Processing*

Session Organizer: Lashanda Gantt-Slaiman

1. ISS GROUND SYSTEMS CAPABILITY AT KENNEDY SPACE CENTER

Leslie Alderman, NASA/ KSC

2. AN INTERNATIONAL SPACE STATION INTERIM CREW RETURN VEHICLE (ICRV)

Tom Hancock, NASA/Marshall Space Flight Center

3. DATA ACCESS AND PROCEDURE GENERATION FOR THE INTERNATIONAL SPACE STATION

Bradley J. Betts, Computer Sciences Corporation

Richard Papasin, NASA/ Ames Research Center

Dawn McIntosh NASA/ Ames Research Center

Rommel Del Mundo, QSS Group, Inc

Robert W. Mah NASA/ Ames Research Center

4. VERIFICATION OF INTERNATIONAL SPACE STATION COMPONENT AND ELEMENT LEAK RATES BY HELIUM ACCUMULATION METHOD

Steve Underwood, The Boeing Company

5. SQUEEZING OUT HEAVY METALS FROM LIVING SPONGES

Kendra Mackett, Satellite High School

AN EVENING WITH THE ASTRONAUTS (7:00 P.M. - 9:00 P.M.)

Science Fair awards presentation and Astronaut Interaction.

*Host: Roy D. Bridges, Jr.,
Center Director
Kennedy Space Center
(STS-51F)*

Roy D. Bridges, Jr., became the Director of NASA's John F. Kennedy Space Center on March 2, 1997. He is responsible for managing all NASA's facilities and activities at the Kennedy Space Center related to processing and launch of the Space Shuttle, processing and integrating NASA payloads flown on both the Shuttle and Expendable Launch Vehicles (ELV's), final tests and preparations of International Space Station (ISS) and experiments elements to be delivered to the ISS by Shuttle, and developing spaceport and range



technologies to improve safety and reduce the cost of access to space.

Bridges is a retired U.S. Air Force Major General who held many key space-related roles during his career. As a NASA astronaut, he piloted the Space Shuttle Challenger on mission STS-51F in July 1985.

He is a distinguished graduate of the U.S. Air Force Academy, Colorado Springs, Co, earning a Bachelor's Degree in Engineering Science. He received a Master of Science Degree in Astronautics from Purdue University, IN., and in May 2001, he received an honorary Doctorate of Engineering Degree from Purdue.

FRIDAY, MAY 2

PANEL SESSION V (9:00 A.M. - 12:30 P.M.)

Radisson Resort at the Port, Convention Center

Special Educational Program for Invited Students

Panel Chair: Jane Mosconi

SPACE CONGRESS GOLF TOURNAMENT

Cocoa Beach Country Club

Check-in: 10:00 a.m. - 11:00 a.m.
Golf Lunch: 11:00 a.m. - 12:00 noon
Golf Tournament: 12:30 p.m. -

Golf Chair: Lisa Ulbricht,

MISSILE, SPACE & RANGE PIONEERS' ANNUAL BANQUET

Officers Club, Patrick Air Force Base

Contact: John Van Cleve (321) 727-2981

Social Hour: 6:30 p.m.
Dinner: 7:30 p.m.
Speaker: 8:30 p.m.

PROGRAM SUMMARY

MONDAY, APRIL 28

REGISTRATION DESK OPEN (12:00 NOON TO 4:00 P.M.)
Radisson Resort at the Port

TUESDAY, APRIL 29

REGISTRATION DESK OPEN (7:30 A.M. TO 5:00 P.M.)
Radisson Resort at the Port

WELCOME CEREMONY (8:30 A.M.)

KEYNOTE ADDRESS (8:45 A.M. TO 9:15 A.M.)
Radisson Resort at the Port, Convention Center

SCIENCE HIGHLIGHT ADDRESS (9:15 A.M. TO 9:45 A.M.)
Radisson Resort at the Port, Convention Center

PANEL SESSION I (10:00 A.M. TO 11:30A.M.)
Radisson Resort at the Port, Convention Center

**EXHIBITS & STUDENTS SCIENCE FAIR
(11:00 A.M. TO 7:00 P.M.)**
Radisson Resort at the Port, Convention Center Exhibit Hall

LUNCHEON (12:00 NOON TO 1:00 P.M.)
Radisson Resort at the Port, Convention Center

PANEL SESSION II (1:30 P.M. TO 4:30 P.M.)
Radisson Resort at the Port, Convention Center

WEDNESDAY, APRIL 30

REGISTRATION DESK OPEN (7:30 A.M. TO 5:00 P.M.)
Radisson Resort at the Port

PANEL SESSION III (8:30 A.M. TO 11:00 A.M.)
Radisson Resort at the Port, Convention Center

**EXHIBITS AND STUDENTS SCIENCE FAIR
(11:00 A.M. TO 6:00 P.M.)**
Radisson Resort at the Port, Convention Center Exhibit Hall

LUNCHEON (11:30 A.M. TO 1:00 P.M.)
Radisson Resort at the Port, Convention Center

PAPER SESSION I (1:30 P.M. TO 5:00 P.M.)

Radisson Resort at the Port, Convention Center

- A. LEARNING ABOUT LIFE IN SPACE
- B. SPACEPORT AND RANGE TECHNOLOGY – TECHNOLOGY DEMONSTRATIONS
- C. SPACEPORT BALLISTIC SAFETY PROGRAM

40TH SPACE CONGRESS GALA (6:30 P.M. TO 9:00 P.M.)

Radisson Resort at the Port, Convention Center

THURSDAY, MAY 1

REGISTRATION DESK OPEN (7:30 A.M. TO 5:00 P.M.)

Radisson Resort at the Port

PANEL SESSION IV (8:30 A.M. TO 11:00 A.M.)

Radisson Resort at the Port, Convention Center

EXHIBITS AND STUDENTS SCIENCE FAIR

(9:00 A.M. TO 3:00 P.M.)

Radisson Resort at the Port, Convention Center Exhibit Hall

LUNCHEON (11:30 A.M. TO 1:00 P.M.)

Radisson Resort at the Port, Convention Center

PAPER SESSION II (1:30 P.M. TO 4:30 P.M.)

- A. EDUCATION AND HISTORY – 100TH ANNIVERSARY OF FLIGHT
- B. BUILDING OF A SPACEPORT – SPACE BUSINESS, LEGAL AND POLICY
- C. ISS UTILIZATION

AN EVENING WITH THE ASTRONAUTS

(7:00 P.M. TO 9:00 P.M.)

Radisson Resort at the Port, Convention Center

FRIDAY, MAY 2

PANEL SESSION V (9:00 A.M. TO 12:30 P.M.)

SPECIAL EDUCATIONAL PROGRAM FOR INVITED STUDENTS

SPACE CONGRESS GOLF TOURNAMENT (10:00 A.M. –)

Cocoa Beach Country Club

MISSILE, SPACE & RANGE PIONEERS' ANNUAL BANQUET

(6:30 P.M. TO 9:00 P.M.)

Patrick AFB, Officers' Club

ACKNOWLEDGMENTS

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