



Space Congress Programs

4-21-1987

1987 Twenty-Fourth Space Congress Program

Canaveral Council of Technical Societies

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TWENTY-FOURTH



SPACE CONGRESS

PROGRAM

Cocoa Beach, Florida April 21, 22, 23, 24, 1987

CHAIRMAN'S MESSAGE

Space Exploration has stimulated the imagination of mankind throughout most of modern history. It has been this fascination with space — our quest for knowledge — that has led to some of the most exciting advancements of this century.



The **Twenty-Fourth Space Congress** will capture this excitement through four days of panel sessions, paper presentations and social activities. **"Space — the Challenge, the Commitment"** was selected by the Space Congress committee to capture the flavor of America's current space program. This past year was the most challenging year in the history of our space program, and through that experience we have gained a renewed commitment to maintaining leadership in space exploration.

The Congress has historically been a gathering of some of the sharpest minds in the aerospace industry, both nationally and internationally. This year that tradition will continue. As you glance through this final program, you will find sessions on the most current topics in the industry, such as America's plans for return to flight, Space Station update, Department of Defense initiatives in space and assessments on the commercialization of space.

The technical paper sessions will be jammed full of information on leading technology and innovations. Other topics include space colonization, computers — today and tomorrow, and other nation's launch vehicles, technology developments, and orbital activities programs.

We welcome back Congressman Bill Nelson who will once again open the Congress with the keynote address. Having experienced space travel firsthand, Congressman Nelson can provide valuable insights on the direction of the space program.

The committee is also planning an expanded exhibit hall where the leading companies in the space business will "display their wares". The Youth Science Fair and the Meet the Astronauts Panel will also be featured. And finally, the very popular golf tournament for the closing day of the Congress.

A new feature of this event will be the improved Proceedings. We have planned a very exciting package to help you pull together the essence of this stimulating symposium. We are again offering the Proceedings at a discounted price when purchased with the Space Congress package.

I look forward to a very exciting, rewarding Congress and hope that you will join me and the Space Congress committee at this Twenty-Fourth annual event.

A handwritten signature in cursive script that reads "J. R. Dubay".

J. R. Dubay
General Chairman
Twenty-Fourth Space Congress

GENERAL INFORMATION

HEADQUARTERS/REGISTRATION

Headquarters for the Twenty-Fourth Space Congress is the Holiday Inn, Cocoa Beach. Registration will take place in the Dolphin Room from noon to 5:00 p.m. Monday, April 20, 1987. Registration will continue from 7:00 a.m. to 5:00 p.m. on Tuesday, Wednesday and Thursday, and from 8:00 a.m. to noon on Friday.

PACKAGE REGISTRATION \$110.00
(Includes four items listed below)

Tuesday Banquet 25.00

Thursday Luncheon 8.00

Loose-Leaf Copy of Proceedings 65.00

Sessions all four days 25.00

Individual Sessions 5.00

Individual Sessions (Students) 2.00

Package registration will save you money; however, each item may be purchased individually at the listed price. Individual papers in the proceedings will be available at a cost of \$.10 per page. Telephone contact can be made through the Holiday Inn 783-2271 (ask for Dolphin Room).

PRESS ROOM

Press headquarters is in the Egret Room of the Holiday Inn and is staffed and directed by Leslie Neihouse 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 noon on Friday. The telephone number in the press headquarters is (305) 799-3527, 3528.

MESSAGE/LOCATOR ASSISTANCE

The sponsoring organization, the Canaveral Council of Technical Societies (CCTS), 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, available at the Registration Desk, to the CCTS/Message/Locator Desk located in the Dolphin Room, Holiday Inn, or by phone to (305) 799-3529, 3530.

PROCEEDINGS

The proceedings of the Twenty-Fourth Space Congress are available at the registration desk in the Holiday Inn during the Space Congress. After the close of the Space Congress, additional proceedings can be purchased for \$70 each plus postage from Secretary, CCTS, Post Office Box 245, Cape Canaveral, Florida 32920.

EXHIBITS

Exhibits will include displays of the Space Shuttle, Shuttle payloads and communications satellites. The exhibit hall and exhibit rooms will be open from 11:00 a.m. to 7:00 p.m. on Tuesday, from 11:00 a.m. to 8:00 p.m. on Wednesday, and from 9:00 a.m. to 1:00 p.m. on Thursday. Representatives of the exhibitors will be in atten-

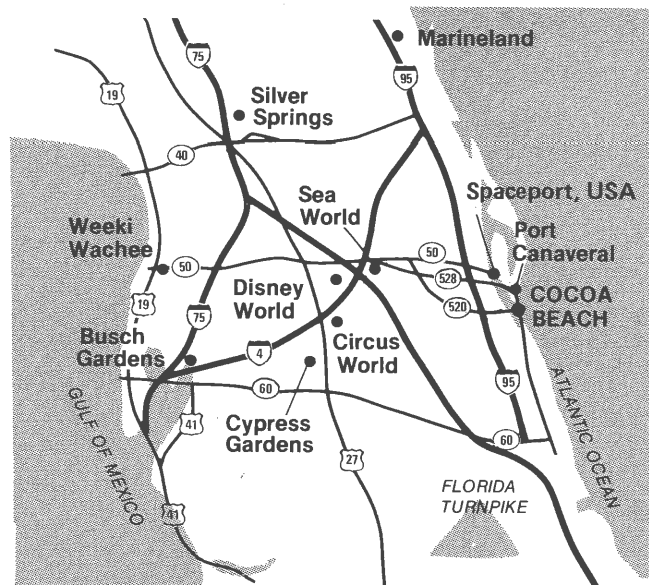
dance to assist and inform visitors. The exhibit hall and rooms are located in the Cocoa Beach Hilton, 1550 N. Atlantic Ave. (A1A), Cocoa Beach.

EXHIBITORS

Advanced Process Systems
Aviation Week
BAMSI
Boeing Company
Brevard Community College
Canaveral Council of Technical Societies
Computer Sciences Corporation
Eastern Electric
Eastman Kodak
EG&G Florida, Inc.
Fairchild-Weston
Florida Institute of Technology
General Dynamics Corporation
Honeywell
International Business Machines Corporation
Lockheed Missiles and Space Company
Martin Marietta Corporation
MBB-ERNO
McDonnell Douglas Corporation
Morton Thiokol
Northrop Services, Inc.
Pan Am World Services, Inc.
Planning Research Corporation
Rocketdyne
Spacehab
Teledyne Brown
TRW, Inc.
United Technologies Corporation
Vitro
Wyle Laboratories
Xerox
Xerox EDDS

ATTRACTION CENTERS

Late April in Florida is a delightful time of the year for the entire family. The weather is pleasant, the hardy find the Atlantic warm enough for swimming and tourist attractions are not yet crowded,



Cocoa Beach offers a long stretch of swimming beach, surfing areas, and both deep-sea and shore fishing. **Sea Escape** one day cruises and three and four day cruises aboard the **SS Oceanic** or the **SS Royale** can be enjoyed from Port Canaveral. Bus tours of the **Kennedy Space Center** and **Cape Canaveral Air Force Station** are available from the **Spaceport, USA** where a free exhibit-filled space museum can be enjoyed by both children and adults.

Within one to two hours drive is a world of vacation fun in the Magic Kingdom of **Walt Disney World** and **Epcot Center — Sea World**, one of America's finest marine attractions — the mystery and excitement of Africa in **Busch Gardens** — famed Glass Bottom boats at **Silver Springs** — the beautiful gardens and daily water ski revue with lovely aquamaids at **Cypress Gardens**.

YOUTH SCIENCE FAIR

Science fair displays and demonstrations from local secondary school students will be open to the public from 11:00 a.m. to 7:00 p.m. on Tuesday, and 11:00 a.m. to 8:00 p.m. on Wednesday. The Thursday schedule is from 9:00 a.m. to 1:00 p.m. All Youth Science Fair Activities will take place in the Dolphin Room of the Cocoa Beach Holiday Inn. Judging will be conducted from 8:00 a.m. to 12:00 p.m. on Wednesday, April 22. The awards will be presented to the winners at the 8:00 p.m. "Meet the Astronauts" panel session to be held at the Beach Theater/Drafthouse in Cocoa Beach at 7:30 p.m. on Thursday, April 23.

PIONEERS' DAY

The Pioneers' Day Banquet '87 will be held on Friday, April 24, at the Officers Open Mess, Patrick Air Force Base.

Speakers: Fred Haise, President, Grumman Technical Services Division, Titusville, FL

Jim Lovell, President, Centel Communications Company, Chicago, IL

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

Registration is April 21, 22 and 23 at the Holiday Inn, Cocoa Beach, and 2:00 to 6:30 p.m. at the Officers Open Mess on April 24.

CANAVERAL COUNCIL OF TECHNICAL SOCIETIES

Air Force Association
Armed Forces Communication Electronics Association
American Institute of Architects
American Institute of Aeronautics & Astronautics
American Institute of Industrial Engineers
American Meteorological Society
American Society of Civil Engineers
American Society of Heating, Refrigeration & A/C Engineers
American Society for Industrial Safety
American Society of Mechanical Engineers
American Society for Nondestructive Testing
American Society for Quality Control
American Society of Safety Engineers
American Society for Training and Development
American Welding Society
Florida Engineering Society
Institute of Electrical & Electronic Engineers

Instrument Society of America
Missile, Space & Range Pioneers, Inc.
National Contract Management Association
National Association of Accountants
Society of Manufacturing Engineers
Society for the Advancement of Materials & Process Engineering
Society of Logistics Engineers
Society of Photo-Optical Instrumentation Engineers
Society for Technical Communication

Many of the societies will have educational/promotional brochures/information on display at the CCTS Desk. Attendees are invited to stop by and review this material.

SPACE CONGRESS GOLF TOURNAMENT

Golfers can enjoy a tournament at the Patrick Air Force Base Golf Course on Friday, April 24. Map available at Registration Desk.

The tournament will be a four player, select shot format, as in the past. You may sign up with one partner or by yourself. The tournament committee will assign teams based on playing ability. Fill in your name and average score for 18 holes on the registration form, along with the same from your partner, and enclose \$25, each person, for the fee. A maximum of 128 players will be registered on a first come, first in basis. Lunch, refreshments on the course, green fees, carts, and trophies are included in the fee. Lunch at 11:30 a.m., and shotgun start at 12:30 p.m. will allow completion in time for Pioneers' Banquet attendance.

Transfer of golf registration will be permitted with notification by April 14. No refunds will be made after April 1.



TWENTY-FOURTH SPACE CONGRESS PROGRAM

TUESDAY, APRIL 21, 1987

KEYNOTE ADDRESS (8:30 a.m. to 9:00 a.m.) Beach Theater

Introduction: Mr. Jim Dubay
Speaker: Congressman Bill Nelson

Bill Nelson serves as a member of the Banking, Finance, and Urban Affairs Committee and the Science and Technology Committee in the House of Representatives. He is chairman of the Space Science and Applications Subcommittee. He was elected to the 96th Congress in November 1978 and subsequently re-elected in 1980, 1982, 1984, and 1986.

He flew as a Payload Specialist Astronaut on Space Shuttle Mission 61-C in January 1986.



Bill attended public schools in Brevard County, Florida and graduated from Melbourne High School in 1960. He attended the University of Florida and graduated with a Bachelor of Arts from Yale. He received a Juris Doctor Degree from the University of Virginia and was admitted to the Florida Bar in 1968.

Bill was a Captain in the United States Army Reserve where he served from 1965 to 1971 and was on active military duty from 1968 to 1970.

He was elected to three terms in the Florida House of Representatives beginning in 1972.

Bill is a member of the Kiwanis Club, the Jaycees, and is a Master Mason. He and his family attend the Tabernacle Church in Melbourne and the National Presbyterian Church in Washington.

Bill has been honored by the Florida Jaycees as one of the Five Outstanding Young Men of Florida in 1975 and nominated as the most valuable member of the Florida House of Representatives in 1976. Two Florida colleges have conferred upon him honorary degrees — a Doctor of Laws from Rollins College and a Doctor of Science from Florida Institute of Technology.

He is married to the former Grace Cavert of Jacksonville. They have two children, Billy and Nan Ellen.

PANEL SESSION I (9:00 a.m. to 11:30 a.m.) Beach Theater

SPACE SHUTTLE RETURN TO FLIGHT

Session Chairman: Mr. Arnold D. Aldrich, Director, NSTS Program Office, NASA Headquarters, Washington, D.C.
Session Organizer: Mr. William Clever, Marshall Space Flight Center Resident Office, NASA, Kennedy Space Center, FL

MEMBERS:

Mr. Leonard S. Nicholson, Manager, National STS Integration and Operations, Lyndon B. Johnson Space Center, Houston, TX
Col. Bryan D. O'Connor, USMC, Assistant Manager, National Space Transportation System Program, Lyndon B. Johnson Space Center, Houston, TX
Mr. Thomas E. Utsman, Director of Space Transportation System Management and Operations, Kennedy Space Center, FL
Mr. William R. Marshall, Manager, Shuttle Projects Office, George C. Marshall Space Flight Center, AL
Mr. Gerald W. Smith, Manager, Solid Rocket Booster Project, George C. Marshall Space Flight Center, AL

PAPER SESSION I (1:00 p.m. to 4:00 p.m.)

A. SPACE COLONIZATION Beach Theater

Session Chairwoman: Dr. B. J. Bluth, Engineering Division, Space Station Office, NASA Headquarters
Session Coordinator: Mr. Preston Beck, Aerospace Consultant, Melbourne, FL

1. HUMAN PERFORMANCE IN SPACE: PROBLEMATIC CHALLENGE
Dr. Bryant Ramer, Distributed Systems Architecture Branch Chief, Space Station Office, NASA Headquarters
2. HUMAN PERFORMANCE IN SPACE: THE ARCHITECTURAL DESIGN CHALLENGE
Mr. Brand Griffin, Space Station Office, Boeing Aerospace Co.
3. HUMAN PERFORMANCE IN SPACE: THE DECISION/MACHINE CHALLENGE
Dr. Karen Cook, Professor, University of Washington

B. EUROPEAN TECHNOLOGY DEVELOPMENT Holiday Inn, Manatee Rooms A&B

Session Chairman: Dr. Hans Kappler, Vice President, External Relations and New Programs, MBB/ERNO Space Systems Group, Bremen, West Germany
Session Organizer: Mr. Berend Koerber, Manager, ERNO USA Operations, Cocoa Beach, FL

1. **LARGE FLEXIBLE SOLAR ARRAYS**
Mr. J. V. Franklin, Space and Commercialization Division,
British Aerospace
2. **ADVANCED TETHERED APPLICATION AND RELATED
TECHNOLOGIES**
Prof. E. Vallerani, AERITALIA
3. **COMMON DMS FOR EUROPEAN IN-ORBIT INFRASTRUC-
TURE**
Mr. P. Jourdan, Manager of Space Transportation and Manned
Systems Programs, MATRA ESPACE
4. **ERM — THE DEPLOYABLE MAST FOR COLUMBUS**
Mr. Herman Riegler, DORNIER SYSTEM
5. **FUTURE EUROPEAN GROUND SEGMENT**
Mr. Grun, Space Systems Group of Messerschmitt-Bolkow-
Blom
6. **RVD TECHNOLOGY FOR FUTURE EUROPEAN SPACE
MISSIONS**
Dr. Injas Widjaja, Space Systems Group of Messerschmitt-
Bolkow-Blom

C. FREE-WORLD EXPENDABLE LAUNCH VEHICLES
Holiday Inn, Manatee Rooms C&D

Session Chairman: Mr. Joseph Mahon, Deputy Associate
Administrator of Space Flight, NASA Headquarters
Session Coordinator: Mr. M. E. McGuire, Electronics Consultant,
Merritt Island, FL

1. **TITAN EXPENDABLE LAUNCH VEHICLES**
Mr. Richard E. Brackeen, Vice President, Space Launch Sys-
tems, Martin Marietta Denver Aerospace
2. **THE DELTA II EXPENDABLE LAUNCH VEHICLE**
Mr. L. C. Raburn, Senior Director, Delta/Delta II Programs,
McDonnell Douglas Astronautics Co.
Mr. J. F. Meyers, Manager, New Business Development,
McDonnell Douglas Astronautics Co.
3. **ARIANE — ADAPTATION TO MARKET FORCES**
Mr. Douglas A. Heydon, President, Arianespace, Inc.
4. To Be Announced.

SPACE CONGRESS BANQUET
Officer's Club, Patrick Air Force Base

Cocktails: 7:00 p.m. to 8:00 p.m.
Banquet: 8:00 p.m.

Introductions: Mr. Jim Dubay
Mr. John Conway
Speaker: Mr. Dale D. Myers, Deputy Administrator, NASA

Mr. Dale D. Myers was appointed in
October, 1986, to be Deputy
Administrator of NASA.



Before rejoining NASA, Mr. Myers
served as an at-large member to the
NASA Advisory Council, the organi-
zation created to provide advice
and counsel to NASA top manage-
ment on aeronautics and space
programs. From 1984 to 1986, he
was a private consultant in Aero-
space and Energy. From 1979 to
1984, he served as President and
Chief Operating Officer to the
Jacobs Engineering Group, Inc., in
Pasadena.

Mr. Myers was Under Secretary of the U.S. Department of Energy
from 1977-1979. From 1974-1977 he was Vice-President, Rockwell
International and President, North American Aircraft Group, El
Segundo, California. He was the Associate Administrator for
Manned Space Flight at NASA from 1970-1974. From 1969-1970
Mr. Myers served as Vice-President/Program Manager, Space Shuttle
Program, Rockwell International. He was Vice-President and Pro-
gram Manager, Apollo Command/Service Module Program, North
American-Rockwell from 1964-1969.

Mr. Myers was born in Kansas City, Missouri, on January 8, 1922.
He graduated from the University of Washington, Seattle in 1943
with a B.S. degree in Aeronautical Engineering and received an
honorary doctorate from Whitworth College in 1970.

Mr. Myers is married to the former Marjorie Williams of Seattle
and they have two children.

WEDNESDAY, APRIL 22, 1987

PANEL SESSION II (8:30 a.m. to 11:30 a.m.)
Beach Theater

SPACE STATION

Session Chairman: Mr. Andrew J. Stofan, Associate Administra-
tor for Space Station, NASA Headquarters, Washington, D.C.
Session Organizer: Mr. Robert Gunter, Space Station Project
Office, Kennedy Space Center, FL

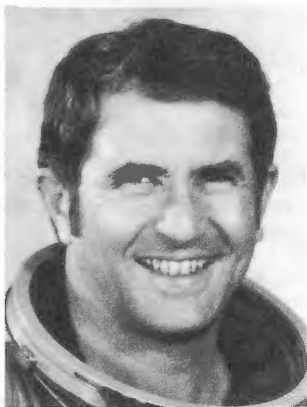
MEMBERS:

- Mr. Jim Sisson, Deputy Director, Space Station Program, Washington, D.C.
Mr. Al Diaz, Director, Strategic Planning Office, Space Station Program, Washington, D.C.
Mr. C. M. Giesler, Manager, Space Station Project Office, Kennedy Space Center, FL

LUNCHEON (11:45 a.m.) Holiday Inn, Manatee Rooms

- Introductions: Mr. Jim Dubay
Mr. John Conway
Speaker: Rear Admiral Richard H. Truly, USN, Associate Administrator for Space Flight, NASA Headquarters

Richard H. Truly was designated a naval aviator in 1960. His initial tour of duty was in Flight Squadron 33, where he flew F-8 Crusaders and made more than 300 carrier landings. From 1963 to 1965, he was first a student and later an instructor at the U.S. Air Force Aerospace Research Pilot School, Edwards Air Force Base, Calif. in 1965, he was among the initial military astronauts selected to the USAF Manned Orbiting Laboratory program. He became a NASA astronaut in 1969 and spent 14 years with NASA.



Truly was pilot for one of the two-man crews that flew the Shuttle Enterprise approach and landing test flights in 1977. He was then assigned as backup pilot for STS-1, the first orbital flight test of the Space Shuttle. His first space flight was STS-2 (Nov. 12-14, 1981) as pilot of the Shuttle Columbia. He was commander of STS-8 (Aug. 30-Sept. 5, 1983), the Shuttle Challenger, the first night launch and landing in the Shuttle program.

Truly became the first commander of the Naval Space Command upon its commissioning on Oct. 1, 1983. The Command is responsible for management and operational control of all Navy satellites in use and provides direct space system support to the fleet worldwide.

After attending schools in Fayette and Meridian, Miss., Truly enrolled as an NROTC midshipman at the Georgia Institute of Technology in 1955. He received a bachelor of aeronautical engineering degree and was commissioned an Ensign in the U.S. Navy in 1959.

Truly has received numerous Defense, Navy and NASA awards. He also is the recipient of the Robert H. Goddard Memorial Trophy, the Thomas D. White Space Trophy and the Robert J. Collier Trophy.

Truly is married to the former Colleen Hanner of Milledgeville, GA. They have three children.

He was appointed to his present position on February 20, 1986.

PAPER SESSION II (2:30 p.m. to 5:30 p.m.)

A. SPACE STATION TECHNOLOGIES Beach Theater

Session Chairman: Dr. James W. Johnson, Deputy Manager, Space Station Projects Office, NASA, KSC
Session Coordinator: Mr. William G. Franklin, Engineering Development, NASA, KSC

1. SPACE STATION GROUND DATA MANAGEMENT (GDMS)
Ms. Jan Heuser, Chief, Systems Integration Branch, NASA, KSC
Mr. William Sloan, Systems Integration Branch, NASA, KSC
2. TECHNOLOGY ADVANCEMENTS TO IMPROVE CREW PRODUCTIVITY IN SPACE
Ms. Melanie M. Mankamy, Space Station Program, McDonnell Douglas Astronautics Co.
3. DESIGN AND DEVELOPMENT OF A COMPUTER-ASSISTED GROUND CONTROL TECHNIQUE FOR SPACE STATION ROBOTICS
Mr. Carl R. Konkel, Teledyne Brown Engineering
Mr. Phillip E. Harmon, Teledyne Brown Engineering
4. CAMERA EXPERT SYSTEM FOR SPACE STATION COMMUNICATIONS AND TRACKING SYSTEM MANAGEMENT
Michael Crone, Harris Corporation
Paul Julien, Harris Corporation

B. SPACE STATION SERVICING Holiday Inn, Manatee Rooms A&B

Session Chairman: Mr. R. A. Croxall, TRW Systems, Redondo Beach, CA
Session Coordinator: Mr. Tom Hammond, Technology Utilization Officer, NASA, KSC

1. SPACE STATION SERVICING
Thomas A. LaVigna, NASA, Goddard Space Flight Center
Helmut P. Cline, NASA, Goddard Space Flight Center
2. SSRMS APPLICATION ON THE MOBILE SERVICE CENTER
Dev. M. Gossain, RMS Division, SPAR Aerospace, Canada
3. AN INVESTIGATION OF SELECTED ON-ORBIT SATELLITE SERVICING ISSUES
Steven J. Hoffman, Advanced Plan and Analysis Division, SAIC
4. SPACE STATION SERVICING USING THE OMV
Jerry L. Jennings, FSD, TRW
Jerome W. Wright, FSD, TRW
A. Wayne Degton, FSD, TRW
5. ON-ORBIT REFUELING OSCRS ADAPTATION TO SPACE STATION
Tom Berry, Fairchild Space Co.

6. DESIGNING SPACECRAFT FOR COMPATIBILITY WITH SPACE STATION
Donald M. Waltz, MSSD, TRW

C. COLUMBUS AND EURECA
Holiday Inn, Manatee Rooms C&D

Session Chairman: Dr. Gerhard Altmann, ESA, Noordwijk, Netherlands
Session Organizer: Mr. Pete Kremer, McDonnell Douglas, KSC

1. COLUMBUS SPACE SEGMENT DEFINITION
Sami Gazey, Director, Columbus Program MBB/ERNO
Frank Longhurst, Columbus System and Integration Manager, ESA/ESTEC
2. THE COLUMBUS MAN TENDED FREE FLYER OPERATIONAL DESIGN FEATURES
Alan J. Thirkettle, Columbus Module Projects Manager, ESA/ESTEC
K. Fahlenbock, Dornier Systems, Friedrichshafen, West Germany
3. ENHANCED EURECA CONFIGURATIONS/OPERATIONS
Wolfgang Nellessen, EURECA Projects Manager, ESA
Jurgen von der Lippe, EURECA Projects Manager, MBB/ERNO
4. To be announced.

EXHIBIT CENTER COCKTAIL RECEPTION
(6:00 p.m. to 7:30 p.m.)
Hilton, Cocoa Beach

THURSDAY, APRIL 23

PANEL SESSION III (8:30 a.m. to 11:30 a.m.)
Beach Theater

DEPARTMENT OF DEFENSE SPACE PROJECTS

Session Chairman: Lt. Gen. Aloysius G. Casey, Commander, Space Division, AFSC, Los Angeles AFS, CA
Session Organizer: Lt. Paul Warden, Eastern Test Range, PAFB, FL

MEMBERS:

MGen Donald L. Cromer, Commander, Space and Missile Test Organization, Vandenberg AFB, CA
MGen Maurice C. Padden, Commander, Air Force Space Command, Peterson AFB, CO
RAdm Richard C. Macke, Commander, Naval Space Command, Dahlgren, VA
BGen Donald G. Hard, Deputy Commander for Launch and Control Systems, Space Division, Los Angeles AFB, CA

PAPER SESSION III (1:00 p.m. to 4:00 p.m.)

A. SECOND GENERATION STS/LAUNCH VEHICLE TECHNOLOGY
Beach Theater

Session Chairman: Lt. Col. Frank Gasperich, USAF, Kirtland AFB, NM
Session Organizer: James Spears, Technology Projects Office, NASA, KSC

1. KEY TECHNOLOGIES FOR ORBITAL TRANSFER VEHICLES
Paul H. Bialla, Program Manager, Orbital Transfer System, General Dynamics Space Systems
William J. Ketchum, Program Manager, Huntsville Operations, General Dynamics Space Systems
2. SHUTTLE II PROGRESS REPORT
Theodore A. Talay, Aerospace Engineer, Shuttle II Study, NASA, LRC
3. TECHNOLOGIES FOR A LOW COST REUSABLE BOOSTER SYSTEM
Thomas D. Martin, Boeing Co.
4. SPACE TRANSPORTATION ON-BOARD COMPUTING: THE AIRCRAFT TO LAUNCH VEHICLE TECHNOLOGY TRANSFER
Raymond A. Bortner, Deputy Program Manager of Multipath Dependent Avionics Systems Program, Flight Dynamics Lab AFWAL

B. COMPUTERS – TODAY, TOMORROW
Holiday Inn, Manatee Rooms A&B

Session Chairman: Mr. Glen H. Mucklow, Office Automation Branch, NASA, KSC
Session Coordinator: Dr. David Flinchbaugh, Aerospace Consultant, Orlando, FL

1. SPACE TRANSPORTATION SYSTEM METEOROLOGICAL EXPERT SYSTEM
Arthur E. Beller, AI Applications Office, NASA, KSC
Dr. Sue P. Stafford, AI Center, Arthur D. Little, Inc.
2. BUILDING INTELLIGENT SYSTEMS: ARTIFICIAL INTELLIGENCE RESEARCH AT NASA AMES RESEARCH CENTER (Publication Only)
Peter Friedland, Intelligent Systems Technology Division, NASA, Ames Research Center
Henry Lumm, Intelligent Systems Technology Division, NASA, Ames Research Center
3. AN OVERVIEW OF COMPUTER GRAPHICS INDUSTRY STANDARDS
Geraldine R. Cuthbert, Manager, Advanced Technology, Software Technology, Inc.

4. OPEN SYSTEMS INTERCONNECT (OIS): NASA PROGRAM COMMUNICATIONS OF THE FUTURE
Charles D. Brady, Manager, Information Systems, NASA Headquarters
5. REGAINING SPACE LEADERSHIP THROUGH CONTROL OF LIFE-CYCLE COSTS
Dave Lowry, Boeing Aerospace Co.
Thomas A. Feaster
6. THE USE OF TRANSPUTERS IN PROCESSING TELEMETRY DATA
Hugo M. Delgado, Engineering Development Directorate, NASA, KSC

C. CONTRACTS AND MANAGEMENT Holiday Inn, Manatee Rooms C&D

Session Chairman: Rear Admiral Stuart J. Evans, (USN Retired), Assistant Administrator for Procurement, NASA Headquarters
Session Organizer: Carol M. Cowen, Procurement Office, NASA, KSC

1. INSURANCE AND INDEMNIFICATION IMPLICATIONS OF FUTURE SPACE PROJECTS
John E. O'Brien, General Counsel, NASA
2. CONTRACTUAL METHODS OF INCENTIVISING IMPROVED FLIGHT SAFETY
James R. Vickers, Missile Systems Group, Hughes Aviation
3. DEBARMENT AND SUSPENSION
Thomas J. Whelan, Procurement Analyst, NASA Headquarters
4. INDUSTRIAL MODERNIZATION INCENTIVES PROGRAM
Capt. Mark W. Phillips, Group Leader, Industrial Sector Analysis, Hq. AFSC/PLMI, Wright Patterson AFB, USAF
5. INNOVATIVE USE OF INCENTIVE CONTRACTS
George T. Nicholas, Chief, Review and Compliance Division, US Army Armament, Munitions and Chemical Command, US Army
6. PERFORMANCE EVALUATION OF WEAPON SYSTEMS PROCUREMENT OFFICES: A RELATIVE EFFICIENCY MEASUREMENT APPROACH
Lt. Col. Gary L. Delaney, Assistant Professor of Contracting Management, Air Force Institute of Technology, Wright Patterson AFB
7. A PROFILE OF DECISION MAKING IN FEDERAL CONTRACT MANAGEMENT
Maj. Curtis R. Cook, Air Force Institute of Technology, George Washington University
8. IMPROVING THE ACQUISITION PROCESS – THE ROLE OF CONGRESS
Colleen A. Preston, Counsel for Procurement Policy, US House of Armed Services Committee (Publish only)

SPACE CONGRESS RECEPTION (5:30 p.m. to 7:30 p.m.) Holiday Inn – Observation Deck

PANEL SESSION IV (7:30 p.m. to 9:30 p.m.) Beach Theater/Drafthouse, Cocoa Beach

MEET THE ASTRONAUTS

Session Chairman: Lt. Gen. Forrest McCartney, Center Director, NASA, Kennedy Space Center, FL

A panel open to the general public with several astronauts and payload specialists discussing present and future activities for men and women in space.

Science Fair Winners will be presented awards.

Astronauts Richard Covey and David Hilmers, who are currently assigned to STS-26, the next Space Shuttle flight, are expected to be present.

FRIDAY, APRIL 24, 1987

PANEL SESSION V (8:30 a.m. to 11:30 a.m.) Beach Theater

SPACE COMMERCIALIZATION

Session Chairman: Mr. Isaac T. Gillam, IV, Assistant Administrator for Commercial Programs, NASA Headquarters, Washington, D.C.

Session Organizer: Mr. James W. Greenwood, Strategic Planning Staff, Kennedy Space Center, FL

MEMBERS:

- Mr. George A. Koopman, President, American Rocket Company, Menlow Park, CA
- Dr. Maxime Faget, President, Space Industries, Inc., Houston, TX
- Dr. John Clark, Space Commercialization Consultant, Princeton, NJ
- Dr. Charles Bugg, Director, Center for Macromolecular Crystals, University of Alabama, Birmingham, AL
- Dr. William C. Tankersley, Director, Business Development, Harris Corporation, Melbourne, FL
- Mr. Gilbert W. Keyes, Director of Commercial Space Products, Boeing Aerospace Company, Seattle, WA
- Mr. Courtney Stadd, Director, Office of Commercial Space Transportation, DOT, Washington, D.C.

PAPER SESSION IV (12:45 p.m. to 3:45 p.m.)

A. TECHNOLOGY SPINOFFS

Holiday Inn, Manatee Rooms A&B

Session Chairman: Mr. Ronald Thornton, Florida Science and Technology Applications Center, Gainesville, FL

Session Organizer: Raymond J. Cerrato, KSC STAC Coordinator, KSC

1. NETWORKING GOVERNMENT LABORATORY FOR INDUSTRY ACCESS
Mr. Loren C. Schmid, Regional Coordinator, Federal Laboratory Consortium, Western Region, Pacific NW Laboratory
Herb Asbury, Program Manager, Research and Technology Applications, NASA Industrial Applications, USCLA
2. SBIR PROVES TO BE A VIABLE SPINOFF MECHANISM
Rowland R. Tibbetts, Program Manager for Small Business Innovation Program, National Science Foundation
3. ADVANCED AIRCONDITIONED SYSTEM DEVELOPED FROM NASA HEAT PIPE TECHNOLOGY
Khanh Dinh, President, Dinh Co., Alachua, FL
4. To be announced.

B. SPECIAL SUBJECTS

Holiday Inn, Manatee Rooms C&D

Session Chairman: Mr. Samuel T. Beddingfield, President, Beddingfield Aerospace Consultants

Session Organizer: Mr. James Nicholson, Meteorologist, Advanced Projects Technology and Commercialization Office, NASA, KSC

1. TRANSFER OF NASA/KSC LIGHTNING PROTECTION TECHNOLOGY
Mr. Frank A. Fisher, Lightning Technologies, Inc.
2. UNIVERSITY OF FLORIDA LIGHTNING RESEARCH AT KENNEDY SPACE CENTER
Martin A. Uman, Professor, Dept. of Electrical Engineering, University of Florida
Ewen M. Thompson, Associate Professor, Dept. of Electrical Engineering, University of Florida
3. ELECTRIC FIELD MILL NETWORK PRODUCTS TO IMPROVE DETECTION AND TERMINATION OF THE LIGHTNING HAZARD
Launa M. Maier, Computer Sciences Corp.
4. ATMOSPHERIC FIELD LABORATORY - A FEASIBILITY STUDY
Mr. William Jafferis, Lightning Studies Manager, Advanced Projects, Technologies and Commercialization Office, NASA, KSC

5. SIMULATED AND ROCKET TRIGGERED LIGHTNING TESTING OF THE LIGHTNING INVULNERABLE DEVICE SYSTEM
Richard T. Hasbrouck, Project Engineer, Lawrence Livermore National Laboratory, University of California
6. SPACE SYSTEM REQUIREMENTS: CAN INDUSTRY MEET THE CHALLENGE FOR SPACE SYSTEMS
Edward S. Houston, Sector Program Manager, USAF/PDP, LA Air Force Station
Capt. Mark W. Phillips, Group Leader Industrial Sector Analysis USA
7. SPACE EDUCATION
George Bunk, Space Round Table, Melbourne, FL
Steven Morgan, Space Round Table, Melbourne, FL
8. MULTIPLEX APPLICATIONS FOR TELECOMMUNICATIONS SIGNALS
Mr. C. E. Roberts, Science Application International Corp.
9. ORBIT DESIGN FOR SPACE AMBULANCE VEHICLE
Mr. Walter C. Nelson, Aerospace Consultant

SPACE CONGRESS GOLF TOURNAMENT (12:30 p.m. to 5:00 p.m.)

Patrick Air Force Base Golf Course - Map available at registration desk.

PIONEERS' ANNUAL BANQUET (6:30 p.m.) Patrick AFB, Officer's Open Mess

Speakers: Former Astronauts Fred Haise and Jim Lovell

6:30 Social Hour

7:30 Dinner

PROGRAM SUMMARY

MONDAY, April 20

12:00 noon to
5:00 p.m.

REGISTRATION DESK OPEN
Holiday Inn Dolphin Room

TUESDAY, April 21

7:00 a.m. to
5:00 p.m.

REGISTRATION DESK OPEN
Holiday Inn Dolphin Room

8:30 a.m. KEYNOTE ADDRESS
Beach Theater

9:00 a.m. to 11:30 a.m. PANEL SESSION I — SPACE SHUTTLE
RETURN TO FLIGHT
Beach Theater

11:00 a.m. to 7:00 p.m. YOUTH SCIENCE FAIR
Holiday Inn Dolphin Room

11:00 a.m. to 7:00 p.m. EXHIBITS
Hilton Convention Center

1:00 p.m. to 4:00 p.m. PAPER SESSION I:
A. SPACE COLONIZATION
Beach Theater

B. EUROPEAN TECHNOLOGY
DEVELOPMENT
Holiday Inn Manatee Rooms A&B

C. FREE-WORLD EXPENDABLE
LAUNCH VEHICLES
Holiday Inn Manatee Rooms C&D

7:00 p.m. BANQUET SOCIAL HOUR
Patrick Air Force Base, Officers
Open Mess

8:00 p.m. BANQUET
Patrick Air Force Base, Officers
Open Mess

WEDNESDAY, April 22

7:00 a.m. to 5:00 p.m. REGISTRATION DESK OPEN
Holiday Inn Dolphin Room

8:30 a.m. to 11:30 a.m. PANEL SESSION II — SPACE STATION
Beach Theater

11:00 a.m. to 8:00 p.m. YOUTH SCIENCE FAIR
Holiday Inn Dolphin Room

11:00 a.m. to 8:00 p.m. EXHIBITS
Hilton Convention Center

11:45 a.m. to 1:00 p.m. SPACE CONGRESS LUNCHEON
Holiday Inn Manatee Rooms

2:30 p.m. to 5:30 p.m. PAPER SESSION II:
A. SPACE STATION TECHNOLOGIES
Beach Theater

B. SPACE STATION SERVICING
Holiday Inn Manatee Rooms A&B

C. COLUMBUS AND EURECA
Holiday Inn Manatee Rooms C&D

6:00 p.m. to 7:30 p.m. EXHIBIT CENTER COCKTAIL
RECEPTION
Hilton Convention Center

THURSDAY, April 23

7:00 a.m. to 5:00 p.m. REGISTRATION DESK OPEN
Holiday Inn Dolphin Room

8:30 a.m. to 11:30 a.m. PANEL SESSION III — DEPARTMENT
OF DEFENSE SPACE PROJECTS
Beach Theater

9:00 a.m. to 1:00 p.m. YOUTH SCIENCE FAIR
Holiday Inn Dolphin Room

~~9:00~~ ^{11:00} a.m. to ~~1:00~~ ^{6:00} p.m. EXHIBITS
Hilton Convention Center

1:00 p.m. to 4:00 p.m. PAPER SESSION III:
A. SECOND GENERATION STS/
LAUNCH VEHICLE TECHNOLOGY
Beach Theater

B. COMPUTERS — TODAY,
TOMORROW
Holiday Inn Manatee Rooms A&B

C. CONTRACTS AND MANAGEMENT
Holiday Inn Manatee Rooms C&D

5:30 p.m. to 7:30 p.m. SPACE CONGRESS RECEPTION
Holiday Inn Observation Deck

7:30 p.m. to 9:30 p.m. PANEL SESSION IV —
MEET THE ASTRONAUTS
Beach Theater/Drafthouse
Cocoa Beach

FRIDAY, April 24

8:00 a.m. to 12:00 noon REGISTRATION DESK OPEN
Holiday Inn Dolphin Room

8:30 a.m. to 11:30 a.m. PANEL SESSION V —
SPACE COMMERCIALIZATION
Beach Theater

12:30 p.m. to 5:00 p.m. SPACE CONGRESS GOLF
TOURNAMENT
Patrick Air Force Base Golf Course

12:45 p.m. to 3:45 p.m. PAPER SESSION IV:
A. TECHNOLOGY SPINOFFS
Holiday Inn Manatee Rooms A&B

B. SPECIAL SUBJECTS
Holiday Inn Manatee Rooms C&D

6:30 p.m. MISSILE, SPACE AND RANGE
PIONEERS' ANNUAL BANQUET
Patrick Air Force Base, Officers
Open Mess

ACKNOWLEDGEMENTS

The Twenty-Fourth Space Congress gratefully acknowledges the special support of the following organizations:

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