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## Space Congress Programs

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4-21-1987

# 1987 Twenty-Fourth Space Congress Program

Canaveral Council of Technical Societies

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**EMBRY-RIDDLE**  
Aeronautical University™  
SCHOLARLY COMMONS

**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-

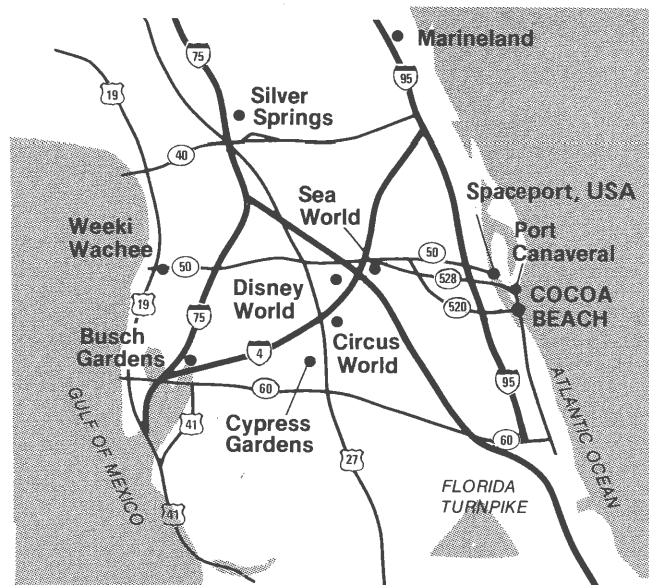
dance to assist and inform visitors. The exhibit hall and rooms are located in the Cocoa Beach Hilton, 1550 N. Atlantic Ave. (A1A), Cocoa Beach.

### 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

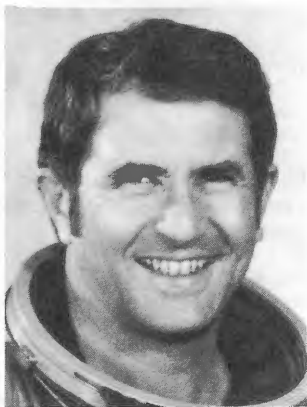
## MEMBERS:

- 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~~ <sup>11:00</sup> a.m. to ~~1:00~~ <sup>6:00</sup> 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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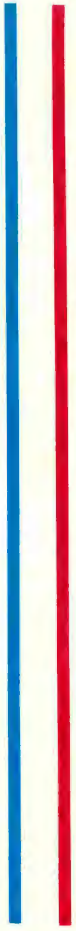
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