

Space Congress Programs

4-22-1986

1986 Twenty-Third Space Congress Program

Canaveral Council of Technical Societies

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TWENTY-THIRD

*Registration
Trusted Copy*

SPACE CONGRESS



*JIM
BEARDALL*

PROGRAM

Cocoa Beach, Florida April 22, 23, 24, 25, 1986

CHAIRMAN'S MESSAGE

On behalf of all the people involved in the aerospace industry, we have dedicated the **Twenty-Third Space Congress** to the memory of the Space Shuttle Challenger Crew. It is in their memory and in keeping with the national unity that has emerged from this tragic loss that we are determined to push forward in space exploration and future programs with renewed and continued dedication.



"Developing Space for Tomorrow's Society", describes the direction and focus of the paper and panel sessions for this year's symposium.

For the past quarter of a century the space program has evolved from exploration and experimentation to a system which will benefit mankind in innumerable ways. Progress in Commercialization, Space Station, current and future international programs and in Department of Defense space projects will be discussed in the upcoming sessions. Key technologies for the broader range of space programs will be discussed along with technological and social implications of major direct and related development efforts.

We are fortunate to have present for the Keynote Address Congressman Bill Nelson, who will be able to speak from his own space experiences. To help commemorate the 75th anniversary of Naval Aviation, we are honored to have Admiral Richard Truly, Associate Administrator for Space Flight, as well as the Navy band and color guard. Other activities during the four-day Congress will include exhibit displays provided by major aerospace corporations on state-of-the-art technology, the award winning Youth Science Fair, the Meet the Astronauts Panel at the Kennedy Space Center new Galaxy Theater, the traditional banquet and luncheon plus the popular Golf Tournament on the last day.

Leaders in industry and government from around the world attend the Space Congress each year to share new technology and to expand personal and public knowledge.

Please join us for the exciting array of programs that will be featured at the Twenty-Third Space Congress. Feel free to contact me or any member of my committee for additional information.

A handwritten signature in cursive script that reads "J. Frank Hamm".

J. Frank Hamm
General Chairman
Twenty-Third Space Congress

GENERAL INFORMATION

HEADQUARTERS/REGISTRATION

Headquarters for the Twenty-Third 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 21, 1986. 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	\$80.00
(Includes four items listed below)	
Tuesday Banquet	20.00
Thursday Luncheon	8.00
Bound Copy of Proceedings	35.00
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 Pat Oliver 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) 783-3770, 3778.

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 783-8552 or 783-8553.

PROCEEDINGS

The proceedings of the Twenty-Third 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 \$40 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 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 attendance to assist and inform visitors. The exhibit hall is located at the Cocoa Beach Hilton, 1550 N. Atlantic Ave. (A1A), Cocoa Beach.

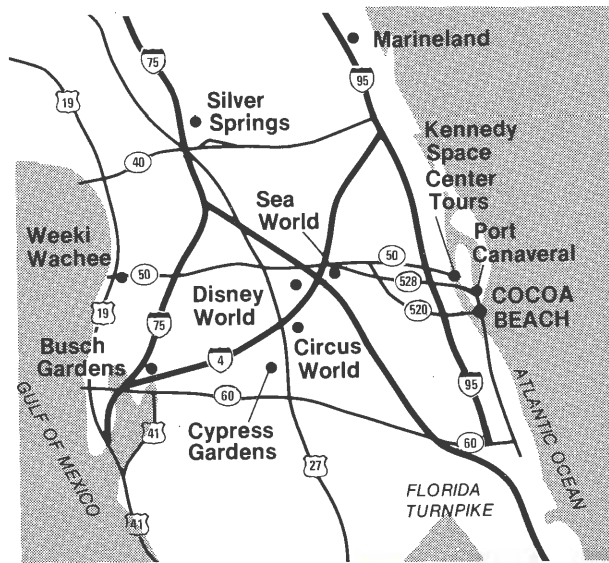
The exhibit center is open to the general public at no charge. A free Shuttle Bus is available on a 30-minute schedule from the registration area, Holiday Inn, to the Beach Theater and the exhibit area in the Cocoa Beach Hilton.

EXHIBITORS

Boeing Company.
Brevard Community College
Canaveral Council of Technical Societies
Computer Sciences Corporation.
Eastman Kodak
EG&G Florida, Inc.
Florida Institute of Technology
General Dynamics Corporation.
Harris Corporation.
Honeywell
International Business Machines Corporation
Lockheed Missiles and Space Company.
Martin Marietta Corporation
MMB-ERNO
McDonnell Douglas Corporation
Northrop Services, Inc.
Pan Am World Services, Inc.
Planning Research Corporation
Rockwell International Corporation
TRW, Inc.
U.S. Navy
United Technologies Corporation
Westinghouse
Wyle Laboratories

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. Three and four day cruises aboard the **SS Royale**, or the **SS Oceanic** can be enjoyed from Port Canaveral. The **Scandinavian Sky** also makes 1 day cruises. 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** — see the show and be a performer at **Circus World**.

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 12:30 p.m. on Wednesday, April 23. The awards will be presented to the winners at the 8:00 p.m. "Meet the Astronauts" panel session to be held at the Galaxy theater, SPACEPORT, USA (KSC Visitors Information Center), at 7:30 p.m. on Thursday, April 24.

PIONEERS' DAY

The Pioneers' Banquet '86 will be held on Friday, April 25, at the Officers Open Mess, Patrick Air Force Base.

Speaker: Pete Conrad
 Captain, USN (Retired)
 Gemini and Apollo Astronaut
 Corporate Vice President, McDonnell
 Douglas Corporation

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

Registration is April 22, 23 and 24 at the Holiday Inn, Cocoa Beach, and 2:00 to 6:30 p.m. at the Officers Open Mess on April 25.

CANAVERAL COUNCIL OF TECHNICAL SOCIETIES

Air Force Association
 American Institute of Aeronautics and Astronautics
 American Institute of Architects
 American Institute of Industrial Engineers
 American Meteorological Society
 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 Control
 American Welding Society
 American Society for Training and Development
 Armed Forces Communications Electronics Association
 Florida Engineering Society
 Institute of Electrical and Electronic Engineers
 Instrument Society of America
 Missile, Space and Range Pioneers, Inc.
 National Contract Management Association
 National Association of Accounts
 Society of Photo-Optical Instrumentation Engineers
 Society of Manufacturing Engineers
 American Society of Safety Engineers
 Society for the Advancement of Materials and Process Engineering
 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 on Friday, April 25th at the Cocoa Beach Golf Course Recreation Center, off Minuteman Causeway.

The tournament will be in a four-player, select shot format with an A, B, C, and D player on each team. Teams will be assigned by the tournament committee. A maximum of 116 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 of \$25. Ask for sign up at Registration Desk. Be at the course as soon after 11:30 a.m. as possible. A shotgun start at 12:30 will allow completion in time for Pioneers' Banquet attendance.

TWENTY-THIRD SPACE CONGRESS COMMITTEE

GENERAL CHAIRMAN

Frank Hamm
PRC Systems Services

VICE CHAIRMAN

Andy Pickett
NASA

FINANCE

Cliff Gurr
Martin Marietta Corp.

ASSISTANT TO CHAIRMAN

Janet Bondar
PRC Systems Services

TECHNICAL PAPERS

Ted Carey
Rockwell International

PROGRAM CHAIRMAN

Ed Andrews
Lockheed Space Operations Co.

LOCAL ACCOMMODATIONS

Gail Galloway
Rockwell International

SPECIAL ARRANGEMENTS

Col. Al Thomas
USAF

PUBLICATIONS/GRAPHICS

Tom Paul
EG&G

LOCAL SUPPORT

Larry Holley
NASA

PUBLICITY

Pat Oliver
McDonnell Douglas
Astronautics Co.

REGISTRATION

Jim Beardall
USBI/BPC

SCIENCE FAIR

David Howell
Brevard County Schools

EXHIBITS

Warren Green
Boeing

LEGAL

Jere Lober
Attorney, Merritt Island, FL

RECORDING SECRETARY

Elena De Rosa
PRC Systems Services

CCTS

Bill Macdonald
McDonnell Douglas
Astronautics Co.

ADVISOR

Dwight Easterly
Vitro Corporation

ADVISOR

Wally Boggs
NASA

TWENTY-THIRD SPACE CONGRESS PROGRAM

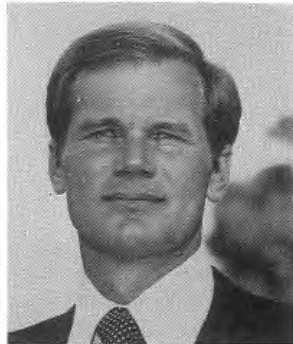
TUESDAY, APRIL 22, 1986

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

Introduction: Mr. J. Frank Hamm
Speaker: Congressman Bill Nelson

Bill Nelson serves as a member of the Banking 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, and 1984.

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 STATION

592-593 474 352
Session Chairman: Mr. Aaron Cohen, Director, Research and Engineering, NASA, Johnson Space Center, TX
Session Organizer: Mr. James W. Johnson, Deputy Manager, Space Station Project Office, NASA, Kennedy Space Center, FL

MEMBERS: To be Announced

Ronald Thomas 353
Ronald Browning 354-357
Robert Thompson
by Rubenstein Pres. RI Space Station
John French

PAPER SESSION I (1.00 p.m. - 4:00 p.m.)

A. INTERNATIONAL SPACE ACTIVITIES Beach Theater

- 602-603 19 479 381
- Session Chairman: Mr. Douglas R. Norton, Chief International Programs Support Office, NASA Headquarters, Washington, D.C.
- Session Organizer: Mr. Berend Koerber, Manager, MBB-ERNO, Kennedy Space Center, FL
1. SPACEHAB - AN INTERNATIONAL INDUSTRIAL VENTURE
Mr. Robert Citron, President, Spacehab, Inc., Seattle, WA
383
 2. PERSPECTIVES OF THE ITALIAN SPACE PROGRAM
Professor Luciano Guerriero, Director, National Space Plan, National Research Council of Italy, Rome, Italy
384
 3. PERSPECTIVES OF THE CANADIAN SPACE PROGRAM
Dr. Art Collin, Secretary, Ministry of State for Science and Technology, Ottawa, Canada
385
 4. PERSPECTIVES OF THE FRENCH SPACE PROGRAM
Professor Jacques-Louis Lions, Chairman, Centre National d'Etudes Spatiales, Paris, France
386
 5. PERSPECTIVES OF THE FEDERAL REPUBLIC OF GERMANY SPACE PROGRAM
Mr. Wulf von Kreis, DFVLR Representative, Washington, D.C.
387
 6. PERSPECTIVES OF THE UNITED KINGDOM SPACE PROGRAM
Mr. Anthony Cox, Science Officer for United Kingdom Embassy, Washington, D.C.
388
 7. ESA INTERNATIONAL PROGRAMS
Mr. Ian Pryke, ESA Representative, Washington, D.C.
389
 8. INTERNATIONAL SPACE ACTIVITIES
Dr. Joan Johnson-Freese, University of Central Florida, Orlando, FL
390
 9. STREAMLINING GROUND OPERATIONS FOR SPACELAB
Mr. Gunter Brandt, D1/D2 Project Manager, MBB-ERNO, Bremen, West Germany
391

shift to Paper II A.# 7.

STEVE SHERMAN.

B. COMPUTERS - WHAT'S NEW AND WHAT'S COMING

Holiday Inn, Manatee Rooms A&B

604-605 19-480 392
Session Chairman: Dr. Winston W. Royce, Resident Director,
Lockheed Software Technology Center, Austin, TX

Session Organizer: Mr. Frank Byrne, Deputy Director, Information
Systems, NASA, Kennedy Space Center, FL 393

1. OPTICAL STORAGE SHINES OVER THE HORIZON
Mr. Carl Warren, Mini-Micro Systems, Irvine, CA 394
2. THE COMING AGE OF PARALLEL-PROCESSING SUPER-COMPUTER
Professor Daniel Nosenchuck and Professor Michael Littman,
Princeton University, N.J. 395
3. KNOWLEDGE BASED PROGRAMMING AT KSC
Mr. James H. Tulley, Jr., Lockheed Space Operations Company,
Kennedy Space Center, FL, and Mr. Carl I. DeLaune, Space
Station Project Office, NASA, Kennedy Space Center, FL 396-397
4. DESIGNING AN INTERACTIVE VIDEO DISC SYSTEM
NETWORK FOR EFFECTIVE TRAINING MANAGEMENT
Mr. Robert S. Carper, Honeywell Information Systems, Inc.,
McLean, VA 397
5. PCOS - AN EXAMPLE OF A MODERN OPERATING
SYSTEM
Mr. V. Phillip Tharp, Electronics Branch, NASA, Kennedy Space
Center, FL 398
6. THE USE OF UNIX IN A REAL-TIME ENVIRONMENT
Mr. Robert D. Luken, Digital Applications Branch, NASA,
Kennedy Space Center, FL, and Mr. Peter C. Simons, Scientific
System Services, Melbourne, FL 400 401

C. LOW COST SHUTTLE PAYLOADS

Holiday Inn, Manatee Rooms C&D

606-607 19 481 402
Session Chairman: Mr. Leonard Arnowitz, Chief, Special Payloads
Division, NASA, Goddard Space Flight Center, MD 403

Session Organizer: Mr. Alan Lindenmoyer, Aerospace Engineer,
Special Payloads Division, NASA, Goddard Space Flight Center,
MD 404-405

1. EXPERIMENTS OF OPPORTUNITY PAYLOADS REVISITED
Mr. David J. Shrewsbury, Head, Attitude Control and Stabil-
ization Branch, Special Payloads Division, NASA, Goddard
Space Flight Center, Greenbelt, MD, and Dr. Raymond G.
Crudace, X-Ray Astronomy Branch, U.S. Naval Research
Laboratory, Washington, D.C. 406
2. GET-AWAY SPECIAL: THE LOW-COST ROUTE TO ORBIT
Mr. Clarke Prouty, Customer Services Division, NASA Head-
quarters, Washington, D.C. 407 408
3. ECONOMY OF MIDDECK PAYLOADS
Mr. Edward L. Michel and Mr. William J. Huffstetler, Flight
Projects Engineering Office, NASA, Johnson Space Center, TX

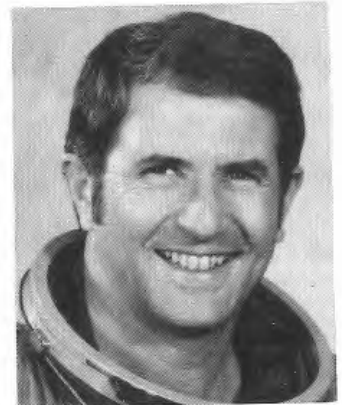
4. SPACELAB HITCHHIKER, FOR RAPID, LOW COST,
ORBITAL RESOURCES 409 410
Mr. Edward James and Mr. John E. Moyer, Office of Space
Flight, NASA Headquarters, Washington, D.C.
5. ASTROSPAS GUNTER BRANDT
Dr. Konrad Moritz, SPAS Program Manager, MBB/ERNO,
Bremen, West Germany

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.

Introduction: Mr. J. Frank Hamm
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 world-wide.

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.

WEDNESDAY, APRIL 23

PANEL SESSION II (8.30 a.m. to 11:30 a.m.)

Beach Theater

*Braunstein B&L No P358
Culbertson 594-595 475 359*

PRODUCTIVITY

19

Session Chairman: Mr. David R. Braunstein, Director, NASA Productivity Programs, NASA Headquarters, Washington, D.C.

Productivity Keynote: Mr. Philip E. Culbertson, NASA General Manager, NASA Headquarters, Washington, D.C.

Session Organizers: Mr. Geoffrey B. Templeton, Program Manager, NASA Productivity Programs, NASA Headquarters, Washington, D.C., and Mr. Warren L. Camp, Chairman, KSC Productivity Council, NASA, Kennedy Space Center, FL

*340
361*

MEMBERS:

Mr. Edward G. Siebert, Director, Corporate Productivity, Grumman Aerospace Corporation, Bethpage, NY

Dr. Martin K. Starr, Professor of Production and Operations Management, Director of the Center of Operations, Graduate School of Business, Columbia University, New York, NY

Ms. Vivian Armor, Manager, Organizational Development, Westinghouse Defense Electronics Center, Baltimore, MD

Mr. G. Wayne Talbot, Manager, Participative Management Program, Government Electronics Group, Motorola Incorporated, Scottsdale, AZ

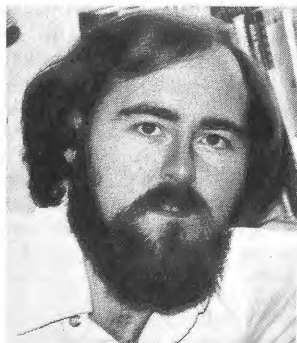
*362
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365*

LUNCHEON (11.45 a.m.)

Holiday Inn, Manatee Rooms

Speaker: Leonard W. David
Director of Research, National Commission on Space

Leonard David is on a one year leave of absence, ending in June, from the National Space Society (formerly the National Space Institute). There he serves as Editor-in-Chief of the monthly **Space World** magazine. On the Presidential Commission, he uses his training in Journalism and Political Science in his responsibility for research tasks related to production of the final report of the Commission, in writing and editing and in developing and managing the Public Forum series of the Commission.



His additional responsibilities at the National Space Society include developing public-oriented regional meetings, conferences, and symposia on varying space topics. He lectures and makes TV and radio presentations and develops press releases.

He previously was a consultant to the Office of Technology Assessment on three studies "Civilian Space Station and the U.S. Future in Space", "Salyut-Soviet Steps Toward Permanent Human Presence in Space" and "Civilian Space Policy and Application". He also was

previously a Research Associate in the Graduate Program in Science, Technology and Public Policy at George Washington University. He has contributed freelance articles to a dozen magazines and newsletters including **Science Digest**, **Omni** and **Air Progress**.

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

A. STREAMLINING GROUND OPERATIONS

Beach Theater

608-609 19 482 412

Session Chairman: Mr. Thomas E. Utsman, Deputy Director, NASA, Kennedy Space Center, FL

Session Organizer: Mr. John W. Harden, NASA, Kennedy Space Center, FL

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1. ROCKWELL SERVICES CENTER - A CONTRIBUTOR TO STREAMLINING GROUND OPERATIONS
Mr. Charles W. Murphy, Director, Support Operations, Kennedy Space Center, FL, and Mr. Ronald S. Tulino, Manager, Rockwell Services Center, Cape Canaveral, FL

415

2. STREAMLINING SHUTTLE GROUND OPERATIONS
Mr. Richard L. Heimbald, Director, Process Engineering, Lockheed Space Operations Company, Kennedy Space Center, FL, and Mr. William H. Reichert, Manager, Integration Engineering, Lockheed Space Operations Company, Kennedy Space Center, FL

416-417

3. AUTOMATION ACTIVITIES IN THE MISSION OPERATIONS DIRECTORATE
Mr. William V. Bates, Head Operations Automation Section, NASA, Johnson Space Center, TX

418

4. STREAMLINING GROUND OPERATIONS - COMMERCIAL PAYLOAD PROCESSING
Mr. George D. Baker, Vice President, Marketing, Astrotech Space Operations, Inc., Silver Spring, MD

419

5. SPACE STATION GROUND OPERATIONS
Mr. Edward J. Scully, Director, Space Station Operations, McDonnell Douglas Astronautics Company, Kennedy Space Center, FL

420

6. SATELLITE SERVICING - LOGISTICS SUPPORT
Mr. Joseph E. Abel, Logistics Manager, Satellite Servicing, Lockheed Missiles & Space Company, Huntsville Engineering Center, Huntsville, AL

421

B. COMMERCIALIZATION OF SPACE

Holiday Inn, Manatee Rooms A&B

610-611 19 483 422

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

Session Organizer: Mr. John Neilon, NASA, Kennedy Space Center, FL (Retired)

423

1. ONE YEAR IN THE LIFE OF A "START-UP" SPACE MANUFACTURING COMPANY
Mr. James A. Ralph, President, International Space Company, Melbourne, FL

424

2. 3M/NASA PROGRAM *425*
Dr. Christopher J. Podsidaly, Director, Science Research Laboratory, Corporate Research Laboratories, 3M/NASA Program, St. Paul, MN
3. OPPORTUNITIES FOR COMMERCIAL PARTICIPATION IN MICROGRAVITY MATERIAL RESEARCH *426*
Mr. Kenneth R. Taylor, Chief, Commercial Processing in Space Group, Program Development, NASA Marshall Space Flight Center, AL
4. "INTOSPACE"-EUROPEAN SPACE MARKETING APPROACH *427*
(Presenter to be named), MBB/ERNO, Bremen, West Germany
5. "EURECA"-EUROPEAN RETRIEVABLE CARRIER *428*
Mr. Sanmuel Gazey, Program Director, MBB/ERNO, Bremen, West Germany
6. GOVERNMENT PROCUREMENT IN THE FUTURE OF COMMERCIAL SPACE PROGRAMS *429*
Dr. Brad M. Meslin, Executive Vice President, Center for Space Policy, Cambridge, MA

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

Session Chairman: Rear Admiral Stuart J. Evans, USN (Retired), Assistant Administrator for Procurement, NASA Headquarters, Washington, D.C. *512-613 24 484 430*

Session Organizer: Mr. Fred H. Van Dyck, CPCM, McDonnell Douglas Astronautics Company, Kennedy Space Center, FL *431*

1. THE DCAA ACCESS TO RECORDS OFFENSIVE - WHERE WILL IT LEAD AFTER WESTINGHOUSE? *432 433*
Mr. Rocco J. Maffei, Jr. and Mr. William E. Porter, Control Data Corporation Legal Services, Minneapolis, MN
2. THE PERSONAL COMPUTER AND GRAVITY PROBE-B MANAGEMENT *434*
Ms. Alice (Joyce) K. Neighbors, Manager GP-B Task Team, Program Development, Marshall Space Flight Center, AL
3. INFLUENCES ON CORPORATE EXECUTIVE DECISION BEHAVIOR IN GOVERNMENT ACQUISITIONS *435*
Mr. James R. Wetherington, DBA; Contract Specialist, NASA, Kennedy Space Center, FL
- 4&5 TWO NEW CONTRACT TYPES FOR OPERATOR OF GOVERNMENT OWNED FACILITIES and CONTRACTING WITHOUT PAPER *436*
Mr. George T. Nickolas, Chief, Small Caliber Ammunition Branch, Ammunition Division, Procurement Directorate, Headquarters US Army, Munitions and Chemical Command, Rock Island, IL
6. DECISION SUPPORT IN THE SOURCE SELECTION PROCESS *437*
Major Curtis R. Cook, United States Air Force Institute of Technology, George Washington University, Washington, D.C.

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

THURSDAY, APRIL 24

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

DEPARTMENT OF DEFENSE SPACE PROJECTS

596-597 476 366
Session Chairman: Lieutenant General Forrest McCartney, USAF, Commander, Space Division, AFSC, Los Angeles AFS, CA
Session Organizer: First Lieutenant Jesse R. Dillard, Jr., Eastern Space and Missile Center, Patrick AFB, FL *367*

MEMBERS:

Major General Donald Henderson, Commander, Space and Missile Test Organization, Vandenberg AFB, CA *368*
Major General Thomas Sawyer, Deputy Chief of Staff Operations, Air Force Space Command, Peterson AFB, CO *369*
~~Rear Admiral Richard Truzy~~, Associate Director for Space Flight, NASA Headquarters, Washington, D.C. *370*
Colonel Joseph Rutter, Deputy for Defense Satellite Communications System, Space Division, USAF, Los Angeles Air Force Station, CA *371*

Col. Phillip

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

A. SPACE STATION TECHNOLOGY
Beach Theater

614-615 19 485 438
Session Chairman: Mr. Seymour Z. Rubenstein, President, Rockwell International, Space Station Division, Downey, CA
Session Organizer: Dr. Gerald D. Carey, Rockwell International, Space Station Division, Downey, CA *439*

1. SPACE STATION TECHNICAL OVERVIEW *440-441*
Mr. Daniel H. Herman, Director, Engineering Division, Office of Space Station, NASA Headquarters, Washington, D.C., and Mr. Marc Bensimon, Chief of Systems/Management Engineering Branch, Engineering Division, NASA Headquarters, Washington, D.C.
2. TECHNICAL OVERVIEW OF JAPAN'S SPACE STATION ACTIVITIES *442*
Mr. Takehiko Kato, Japanese Liaison for Space Station, NASDA, Johnson Space Center, TX
3. DESIGN FEATURES AND OPERATION OF THE INDUSTRIAL SPACE FACILITY *443*
Mr. Caldwell Johnson, Director of Engineering, Space Industries, Inc., Houston, TX *444 445*
4. SPACE STATION MICROGRAVITY AND MATERIAL PROCESSING FACILITY - A NATIONAL LAB IN SPACE
Mr. Harry L. Atkins, Commercialization of Material Processing in Space Group, Program Development, NASA, Marshall Space Flight Center, AL, and Mr. Edgar Pevey, Senior Systems Analyst, Teledyne Brown Engineering, Huntsville, AL *483*

Don Brickett # 483

5. SPACE STATION DATA MANAGEMENT SYSTEM ASSESSMENT METHODOLOGY

William R. Jones, ISD-System Architecture, NASA Langley Research Center, VA, David Bahrs, Senior Member of Executive Staff, Jack P. Craig, Senior Computer Scientist, Edward C. Luczak, Consulting Engineer, and Dr. Antonio Vallone, Senior Consulting Engineer, Computer Sciences Corporation, Silver Spring, MD

6 Marc Vaucher customer utilization requirements & their impact.
#414
B. IMPACT OF SATELLITES ON DAILY LIFE
Holiday Inn, Manatee Rooms A&B

616-617 24 486 451
Session Chairman: Mr. Glynn S. Lunney, President, Rockwell International, Satellite Systems Division, Seal Beach, CA

Session Organizer: Mr. David M. Dysart, Manager, Global Positioning Satellite Department, Rockwell International Corporation, Satellite Systems Division, Cape Canaveral AF Station, FL 379

1. GLOBAL POSITIONING SYSTEM APPLICATIONS

Mr. Thomas S. Logsdon, Member of the Technical Staff Global Positioning System, Rockwell International Corporation, Satellite Systems Division, Seal Beach, CA, and Mr. James D. Ashley, Chief Program Engineer, Global Positioning System, Rockwell International Corporation, Satellite Systems Division, Seal Beach, CA

2. TOPEX/POSEIDON—MAPPING THE OCEAN SURFACE

Mr. Charles A. Yamarone, Manager, TOPEX Development Flight Project, Jet Propulsion Laboratory, Pasadena, CA, and Mr. Sheldon Rosell, TOPEX Ground Data System Manager, Jet Propulsion Laboratory, Pasadena, CA

David Farless -456
3. GAMMA RAY OBSERVATORY, ON-ORBIT SERVICING

Mr. Donald A. Melgaard, GRO/STS Interface Manager, Federal Systems Division, TRW Space & Technology, Redondo Beach, CA

4. EOS: WHERE, WHEN AND HOW

Mr. Charles D. Walker, Chief Test Engineer and Payload Specialist, McDonnell Douglas Astronautics Company, St. Louis, MO

Bill Palmé
5. SATCOM KU BAND SPACECRAFT

Mr. Joseph L. Elko, Manager of Spacecraft Engineering and Operations, RCA Communications, Princeton, NJ

6 Weather Satellites Keathley 488
C. SECOND GENERATION STS/LAUNCH VEHICLES TECHNOLOGY

Holiday Inn, Manatee Rooms C&D

618-631 24 487 488 460 481
Session Chairman: Dr. Gerald D. Walberg, Chief, Space Systems Division, NASA, Langley Research Center, VA

Session Co-Chairman: Lieutenant Colonel Frank J. Gasperich, Jr., Special Assistant to Commander for Space Transportation, Air Force Space Technology Center, Kirtland AF Base, NM

Session Organizer: Mr. James M. Spears, Chief, Technology Projects Office, NASA, Kennedy Space Center, FL 452

1. AN OVERVIEW OF STRUCTURES AND MATERIALS FOR FUTURE SPACE VEHICLES

Mr. Alan H. Taylor, Senior Research Scientist, NASA, Langley Research Center, VA, and Mr. L. Robert Jackson, Senior Research Scientist, NASA, Langley Research Center, VA

2. THE NATIONAL AEROSPACE PLANE PROJECT

Mr. Robert Williams, Program Manager, Air Warfare Division, Tactical Technology Office, Defense Advanced Research Project Agency, and Mr. Robert A. Jones, Manager, Aerospace Plane Technology Office, Office of Aeronautics and Space Technology, NASA Headquarters, Washington, D.C.

3. EXPERT SYSTEMS FOR FUTURE SPACE TRANSPORTATION SYSTEMS

Mr. Carl Ehrlich, Project Manager, Rockwell International, Space Transportation Systems Division, Downey, CA
GILBERT NIXON 467
TOM REID 489

4. FLIGHT CONTROL FOR ADVANCED SPACE TRANSPORTATION SYSTEMS

Mr. W. Gene Janes, Staff Engineer, Flight Control Division, Flight Dynamics Laboratory, Wright Patterson AF Base, OH, and Mr. Vernon O. Hoehne, Assistant Branch Chief, Control Dynamics Branch, Wright Patterson AF Base, OH

PANEL SESSION IV (7:30 p.m. to 9:30 p.m.)
Galaxy Theater – Spaceport USA

MEET THE ASTRONAUTS

Session Chairman: Mr. Richard G. Smith, 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.

FRIDAY, APRIL 25

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

SECOND GENERATION SPACE TRANSPORTATION SYSTEM

598-599 427 372
Session Chairman: Mr. Paul F. Holloway, Deputy Director, NASA, Langley Research Center, VA 600-601 478 373

Co-Chairman: Col. William F. H. Zersen, Deputy Commander for Launch and Control Systems, Space Division AFSC, Los Angeles AFS, CA

Session Organizer: Mr. David Moja, Acting Manager, Future Projects Office, NASA, Kennedy Space Center, FL 374

MEMBERS:

Dr. Donald B. Jacobs, Vice President, Space Transportation Division, Boeing Aerospace Company, Seattle, WA 375

Dr. John B. Peller, Vice President, Engineering, Rockwell International Corporation, Downey, CA 376

Mr. Richard L. Brackeen, Vice President, Space Launch, Martin Marietta Denver Aerospace, Denver, CO 377

Mr. William F. Rector, III, Division Vice President, General Dynamics, San Diego, CA 378

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

A. ROBOTICS AND ARTIFICIAL INTELLIGENCE IN AERO-SPACE OPERATIONS

Holiday Inn, Manatee Rooms A&B

Session Chairman: Dr. David E. Flinchbaugh, Section Chief, Systems Engineering, McDonnell Douglas Astronautics Company, Titusville, FL

Session Organizer: Mr. Michael Reggia, Engineering, Morton Thiokol, Kennedy Space Center, FL

1. AI APPLICATIONS IN SPACE SYSTEMS OPERATIONS; AN OVERVIEW OF THE SIORA PROGRAM
Mr. Michael J. Wiskerchen, Stanford University, Stanford, CA, and Mr. James R. Grady, Lockheed Missiles & Space Company, Palo Alto, CA
2. SPACE SHUTTLE FUEL CELL MONITORING AUTOMATION PROTOTYPE
Ms. Marilyn Kimball, Training Applications Branch, NASA, Johnson Space Flight Center, TX
3. VERY SMART ROBOTIC SPACECRAFT FOR DEEP SPACE AND INTERSTELLAR EXPLORATION
Dr. Joseph A. Angelo, Jr., Chairman, Space Technology Program, Florida Institute of Technology, Melbourne, FL
4. PHOTOGRAMMETRIC CLOSED LOOP CONTROL OF A REMOTE MANIPULATOR SYSTEM
Mr. Graham Norgate, Manager of R&D, Remote Manipulator Systems, SPAR Aerospace Limited, Ontario, CA
5. A ROBOT HAND FOR REMOTE SATELLITE SERVICING
Dr. Antal Bejczy, Jet Propulsion Laboratory, Pasadena, CA
6. AN INTERACTIVE ANIMATED DISPLAY OF MAN-CONTROLLED AND AUTONOMOUS ROBOTS
Dr. John Duffy, Professor and Director, Center for Intelligent Machines and Robotics, University of Florida, Gainesville, FL and Mr. Carl D. Crane, Research Associate, Center for Intelligent Machines and Robotics, University of Florida, Gainesville, FL

B. SPECIAL TOPICS

Holiday Inn, Manatee Rooms C&D

Session Chairman: Mr. Sam T. Beddingfield, Beddingfield Aerospace Consultants, Titusville, FL

Session Organizer: Mr. Preston E. Beck, Assistant Research Professor, Florida Institute of Technology, Melbourne, FL

1. EXPENDABLE LAUNCH VEHICLE AS A COMPLEMENT TO THE SPACE SHUTTLE
Mr. Lee R. Scherer, Director, Commercial Space Program, General Dynamics, Space Systems Division, San Diego, CA
2. RECOVERY TECHNOLOGY FOR UNMANNED LAUNCH VEHICLES
Mr. Gary W. Johnson, STS Study Group, NASA, Marshall Space Flight Center, AL
3. SELF-LIMITING EXPLOSIVE PROPERTIES OF LIQUID HYDROGEN AND OXYGEN
Mr. Wallace H. Boggs, Technical Assistant to Chief, Facilities Division, NASA, Kennedy Space Center, FL

4. GOVERNMENT CONCEPTUAL ESTIMATING FOR CONTRACTING AND MANAGEMENT
Mr. Joseph A. Brown, Lead Cost Engineer, NASA, Kennedy Space Center, FL
5. CAPE CANAVERAL - A MAIN CAMPUS FOR THE UNIVERSITY OF SPACE
Dr. Joseph A. Angelo, Jr., Chairman, Space Technology Studies, Florida Institute of Technology, Melbourne, FL
6. SOLAR DYNAMIC POWER FOR SPACE STATION
W. Grosskopf, Member of Technical Staff, Space Station, Rockwell International, Rocketdyne, Canoga Park, CA
(Presented by Ernie Binz, Chief Engineer, Space Station)

7 AI and Robotics TOM KILLMAN

Kim Jones?

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

Cocoa Beach Golf Course - Recreation Department off Minuteman Causeway

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

6:30 Social Hour

7:30 Dinner

PROGRAM SUMMARY

MONDAY, April 21

12:00 noon to 5:00 p.m. REGISTRATION DESK OPEN
Holiday Inn Dolphin Room

TUESDAY, April 22

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 STATION
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. INTERNATIONAL SPACE ACTIVITIES
 Beach Theater

B. COMPUTERS — WHAT'S NEW AND WHAT'S COMING
 Holiday Inn Manatee Rooms A&B

C. LOW COST SHUTTLE PAYLOADS
 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 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 II — PRODUCTIVITY
 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. STREAMLINING GROUND OPERATIONS
 Beach Theater

B. SPACE COMMERCIALIZATION
 Holiday Inn Manatee Rooms A&B

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

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

THURSDAY, April 24

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 a.m. to 1:00 p.m. EXHIBITS
 Hilton Convention Center

1:00 p.m. to 4:00 p.m. PAPER SESSION III:
 A. SPACE STATION TECHNOLOGY
 Beach Theater

B. IMPACT OF SATELLITES ON DAILY LIVES
 Holiday Inn Manatee Rooms A&B

C. SECOND GENERATION STS/LAUNCH VEHICLE TECHNOLOGY
 Holiday Inn Manatee Rooms C&D

7:30 p.m. to 9:30 p.m. PANEL SESSION IV — MEET THE ASTRONAUTS
 Galaxy Theater—SPACEPORT USA
 (KSC Visitor's Information Center)

FRIDAY, April 25

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 — SECOND GENERATION SPACE TRANSPORTATION SYSTEM
 Beach Theater

12:30 p.m. to 5:00 p.m. SPACE CONGRESS GOLF TOURNAMENT
 Cocoa Beach Golf Course

12:45 p.m. to 3:45 p.m. PAPER SESSION IV
 A. ROBOTICS AND ARTIFICIAL INTELLIGENCE IN AEROSPACE OPERATIONS
 Holiday Inn Manatee Rooms A&B

B. SPECIAL TOPICS
 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-Third Space Congress gratefully acknowledges the special support of the following organizations:

Air Force Eastern and Missile Center
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WAMT, WCKS

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**THE ARTISTS FORUM of the Brevard Museum and Art Center
has graciously agreed to display a collection of
thirty-six selected works of the "Brevard Artists Space Experience"
A visit to view the launch of Mission 61-A,
Challengers Mission of October – November 1985**

IN MEMORY OF CHALLENGER'S 51-L CREW





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