4-25-1979

1979 Sixteenth Space Congress Program

Canaveral Council of Technical Societies

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THE SIXTEENTH SPACE CONGRESS will be a significant contribution to a better understanding and appreciation of the benefits that have and will continue to accrue from the nation's space program. Our theme this year, SPACE—EVERYONE BENEFITS, accents the broad scope of the nation's space activity and its benefit to mankind. We have planned an interesting and dynamic program, one that will bring you up to date on space activities as well as give you visibility into the future.

As in the past, panel sessions and complementing paper sessions will be held on a wide variety of topics. Panel sessions will include "Space Transportation System Update" and "Space Benefits." In addition, based on last year's outstanding success, Lee Scherer, Director of Kennedy Space Center, will chair a panel of astronauts. The paper sessions will include discussions on Shuttle Payloads, Spacelab, Technology Transfer, Space Commercialization, and a session on Department of Defense space activities. Our chairpersons for panels and papers are leaders in the space program from both Government and Industry.

A special highlight of the SIXTEENTH SPACE CONGRESS will be a nationally recognized speaker for the keynote address. Our distinguished luncheon and banquet speakers will be a vital part of the Space Congress social program. Exhibits displaying the latest in space science and technology are always an added attraction.

We hope you will make plans to be with us for this very important Space Congress in "The Year of the Space Shuttle." We think it will be a highlight of your involvement in space activities in 1979. Don't forget that Florida in the spring is a wonderful place to visit. Adding a tour of the Kennedy Space Center and the world famous attractions shown on the enclosed map should round out your trip and make it one long to be remembered.

I look forward to seeing you.

Thomas R. Brown, Jr.
General Chairman
Sixteenth Space Congress
GENERAL INFORMATION

HEADQUARTERS/REGISTRATION

Headquarters for the Sixteenth Space Congress is the Beachside Motel, Cocoa Beach. The telephone number for the Headquarters is (305) 784-3751. Registration will take place in the Beachside Motel Lobby starting at 12 noon Tuesday, April 24, for early arrivals. Registration will continue on Wednesday and Thursday from 8:00 a.m. to 5:00 p.m. and Friday from 8:00 a.m. to 12 noon. The telephone number for the Registration Desk is (305) 784-3770.

The following choices are available to registrants:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tr>
<td>PACKAGE REGISTRATION</td>
<td>$35.00</td>
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<tr>
<td>(Includes 4 items listed below)</td>
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<tr>
<td>Wednesday Banquet</td>
<td>10.00</td>
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<tr>
<td>Thursday Luncheon</td>
<td>4.00</td>
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<tr>
<td>Proceedings</td>
<td>12.50</td>
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<tr>
<td>Registration</td>
<td>15.00</td>
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The Package Registration will save you money; however, each item may be purchased individually at the regular price. Individual papers in the proceedings will be available at a cost of $1.00 per copy.

Students may attend individual Panels or Paper Sessions at a special rate of $2.00 per session payable at the Registration Desk.

PRESS ROOM

Press Headquarters is in Room 106 of the Beachside Motel and is manned by Chuck Morley and his staff from 8:00 a.m. to 5:00 p.m. on Wednesday and Thursday and from 8:00 a.m. to 2:00 p.m. on Friday. The telephone number in the Press Headquarters is (305) 784-3387.

MESSAGE CENTER

A message center will be located in the lobby of the Beachside Motel. Messages and telephone calls will be placed on a message board in the Beachside Motel lobby. During the Congress hours, calls to this center should be placed to (305) 784-3751. After session hours, calls can be made to the Beachside Motel operator at (305) 783-9441.

AUTO RENTALS

Reservations and rentals can be made at Cocoa Beach or at the Melbourne and Orlando International airports. Agencies include:

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<th>AVIS</th>
<th>Econo-Car</th>
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<td>Budget</td>
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ATTRACTION CENTERS

April in Florida is a delightful time for the entire family. Cocoa Beach, with its famed golden beaches, fishing opportunities and surfing, is but one of many Florida family vacation centers. Just to the north of the SPACE CONGRESS Headquarters is the world's largest building, the Vehicle Assembly Building, at Kennedy Space Center. Within a short scenic drive one can reach—a world of vacation fun in the Magic Kingdom of Walt Disney World—Sea World, America's most elaborate marine life park—the mystery and excitement of Africa at Busch Gardens—the famed Glass Bottom Boats at Silver Springs—the daily water ski revue with beautiful aquamaids at Cypress Gardens—or, be a circus performer at Circus World.

PROCEEDINGS

The Proceedings of the Sixteenth Space Congress are available at the Registration Desk in the Beachside Motel Lobby during the Space Congress. Individual papers are available for $1.00 per copy at the Registration Desk.

After the close of the Space Congress, additional proceedings can be purchased for $25.00 each plus postage from:

Secretary, CCTS
Post Office Box 245
Cape Canaveral, Florida 32920

The Canaverel Council of Technical Societies has a table in the Registration area for the sale of previous Space Congress Proceedings at reduced rates.

EXHIBITS

Exhibits will include displays of the Space Shuttle, Shuttle payloads, solar energy and communication satellites.

The Exhibit Hall will be open from 8:00 a.m. to 5:00 p.m. on Wednesday, from 8:00 a.m. to 7:00 p.m. on Thursday, and from 8:00 a.m. to 2:00 p.m. on Friday. Representatives of the exhibits will be in attendance to assist and inform visitors. The Exhibit Hall is located at the Cape Colony Convention Center.

The general public is invited to view the exhibits.

EXHIBITORS

United Technologies Corporation
Pratt and Whitney Aircraft Group
Government Products Division
United Technologies Corporation
Chemical Systems Division
Lockheed Missiles and Space Company, Inc.
IBM
TRW Planning Research Corporation (PRC)
Kodak
Rockwell International Corporation
Computer Science Corporation
The Space Coast Tourism Committee
Boeing
National Aeronautics and Space Administration
Brevard Community College
Florida Institute of Technology
American Meteorological Society

YOUTH SCIENCE FAIR

Regional Youth Science Fair displays and demonstrations will be open to the public at the Beachside Motel. Judging will take place on Wednesday, 8:00 a.m. to 12 noon, at the Beachside. The awards will be presented at the Cocoa Beach Theater on Thursday at 8:00 p.m. immediately before the start of the Panel Session—MEET THE ASTRONAUTS.

PIONEERS DAY

The Missile, Space and Range Pioneer's cocktail party and banquet will be held on Friday evening, April 27. The Pioneers are the men and women who have been associated with aerospace since the beginning of the space program. Their banquet is an event well worth attending.
The Annual Reunion Banquet is scheduled to be held at the Beachside Motel, Gold Room, starting at 7:00 p.m. Banquet reservations are available from Pioneer representatives during the Congress in the Beachside lobby.

SIXTEENTH SPACE CONGRESS PROGRAM

WEDNESDAY, APRIL 25

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

Introduction: Thomas R. Brown, Jr., General Chairman
Speaker: Honorable William Nelson
U.S. Representative, 19th District, Florida

Bill Nelson is our U.S. Representative to the 96th Congress. He is a member of the House Science and Technology and the Budget Committee. A resident of Melbourne, Florida, Bill is a graduate of Yale University and the University of Virginia School of Law. He served as a Captain in the Army and the Army Reserve. Bill was admitted to the Florida Bar in 1968 and was elected to the State House of Representatives in 1972. There he served on various vital committees until he was elected to the 96th Congress, November 7, 1978.

PANEL SESSION (9:00 a.m. to 12:00 noon)
Cocoa Beach Theater

SPACE TRANSPORTATION SYSTEMS UPDATE

Session Chairman: John F. Yardley, Associate Administrator, Office of Space Transportation Systems, NASA Headquarters, Washington, D.C.

Session Organizer: Janice Fyock, Executive Assistant to the Associate Administrator, Office of Space Transportation Systems, NASA Headquarters, Washington, D.C.

Robert F. Thompson, Program Manager, Space Shuttle Program Office, NASA, Johnson Space Center, Houston, TX

LT GEN Richard C. Henry, USAF, Commander, SAMSO, Los Angeles, CA

Theodore D. Smith, Vice President, Space Programs, McDonnell Douglas Astronautics Co., Huntington Beach, CA

Dr. Burkhard R. K. Pfeiffer, Project Manager, Spacelab, European Space Agency

A. SPACE SHUTTLE UPDATE
Cocoa Beach Theater

Session Chairman: Robert F. Thompson, Program Manager, Space Shuttle Program Office, NASA, Johnson Space Center, Houston, TX

Session Organizer: Augustine A. Verrengia, Executive Assistant, Shuttle Program Office, NASA, Johnson Space Center, Houston, TX

1. “Shuttle Integration Status”
   Owen G. Morris, Manager, Systems Integration, Shuttle Program Office, NASA, Johnson Space Center, Houston, TX
   Albert C. Martin, Chief Engineer, STS Integration and Operations Division, Rockwell International Corp., Downey, CA

2. “Space Shuttle Orbiter: Countdown”
   Aaron Cohen, Project Manager, Space Shuttle Orbiter Project Office, NASA, Johnson Space Center, Houston, TX
   Edward C. Smith, Vice President and General Manager, Shuttle Orbiter Division, Rockwell International Corp., Downey, CA

3. “Status of Space Shuttle External Tank, Solid Rocket Booster and Main Engine”
   Robert E. Lindstrom, Manager, Shuttle Projects Office, NASA, Marshall Space Flight Center, AL

4. “KSC Facilities Status and Planned Management Operations”
   Dr. Robert H. Gray, Manager, STS Projects Office, NASA, Kennedy Space Center, FL
   Thomas J. O’Malley, Vice President and General Chairman, Space Division Launch Operations, Rockwell International Corp., Kennedy Space Center, FL

5. “Space Shuttle Orbital Flight Test”
   Donald K. Slayton, Manager, Orbital Flight Test, Space Shuttle Program Office, NASA, Johnson Space Center, Houston, TX

B. DOD INITIATIVES IN SPACE
Beachside Gold Room

Session Chairman: LT COL Burton Holaday, USAF, Director of Plans, SAMSO, Los Angeles, CA

Session Organizer: LT COL Joe Graetch, SAMSO, USAF, Los Angeles, CA

1. “The Utility of Military Crews in Space”
   COL Morgan W. Sanborn, USAF Headquarters, The Pentagon

2. “Military Space Doctrine”
   LT COL David R. McNabe, USAF Headquarters, The Pentagon
SPACE CONGRESS BANQUET
Beachside Gold Room
Cocktails — 7:00 p.m. to 7:45 p.m.
Banquet — 8:00 p.m.

Introduction: Thomas R. Brown, Jr., General Chairman

Speaker: Honorable Harrison H. Schmitt
U.S. Senator, New Mexico

Harrison H. "Jack" Schmitt, Ph.D., returns to the Space Coast as the Senator from New Mexico, but we'll always remember him as the first astronaut-scientist to leave here for a walk (and ride) on the Moon. At that time, Jack was the lunar module pilot for Apollo 17, which landed at the region of Taurus-Littrow. During that 12 1/2 day mission, he and Commander Eugene Cernan spent almost 75 hours on the lunar surface participating in three extravehicular activities (EVA's) totaling 21 hours including the longest single moonwalk: seven hours and 37 minutes. Using the lunar rover, they covered 32 Kilometers (19.9 miles) and collected 117 Kilograms (258 pounds) of lunar samples.

Jack was born in Santa Rita, New Mexico, and raised in Silver City, where he graduated from Western High School. He received a Bachelor of Science degree from the California Institute of Technology and won a Fulbright Fellowship to the University of Oslo for two years. He went on to earn his Doctorate in Geology from Harvard University in 1964. After graduating from Harvard, Dr. Schmitt spent a year working for the U.S. Geological Survey, Astrogeological Center in Flagstaff, Arizona, where he was Project Chief for Lunar Field Geological Methods and participated in photo and telescopic mapping of the Moon as well as instructing NASA astronauts during their geological field trips.

In 1965, NASA selected Jack as a scientist-astronaut and sent him to Williams Air Force Base, Arizona, where he completed a 53-week flight training course. While he trained for space flight, he also instructed Apollo flight crews in lunar navigation, geology, and feature recognition. In addition, he assisted in the integration of scientific activities into the Apollo lunar missions as well as participating in the research activities and the analysis of samples returned from the Moon by Apollo missions. Prior to Apollo 17, Schmitt served as backup lunar module pilot for Apollo 15. He has logged more than 1,665 hours flying time.

Jack was appointed NASA Assistant Administrator for Energy Programs in 1974, but resigned from the space program the following year and returned to New Mexico to enter the senatorial race. He was elected to the United States Senate for a 6-year term which began January 1977.

Senator Schmitt serves on the Commerce, Science and Transportation Committee; the Banking, Housing, and Urban Affairs Committee and is Vice Chairman of the Ethics Committee.

A recipient of numerous professional and academic awards, Senator Schmitt retains his membership in various scientific organizations, including the Geological Society of America, the American Geophysical Union, the American Association for the Advancement of Science, the American Association of Petroleum Geologists, and the American Institute of Aeronautics and Astronautics.

THURSDAY, APRIL 26

PAPER SESSIONS (8:30 a.m. to 11:30 a.m.)

A. SPACELAB
Cocoa Beach Theater

Session Chairman: Dr. Burkhard R. K. Pfeiffer, Project Manager, Spacelab, ESA

Session Organizer: Dr. David Shapland, ESA Headquarters, Paris, France

1. “Spacelab Development Status”
Klaus Berge, Spacelab Project Manager, ERNO

2. “Spacelab — A Critical Review”
Dr. David Shapland, Spacelab Directorate, ESA

3. “Spacelab Ground Operations”
John N. Dickinson, Spacelab Project Manager, NASA, Kennedy Space Center, FL

4. “Spacelab Flight Operations”
Charles S. Harlan, Chief, Payload Operations Division, Flight Operations Directorate, NASA, Johnson Space Center, Houston, TX

5. “Spacelab Follow-On Development”
W. Nellessen, Manager, Systems Division, Spacelab Project, ESA

B. TECHNOLOGY TRANSFER
Beachside Gold Room

Session Chairman: Floyd I. Roberson, Director, Technology Transfer Division, Office of Space and Terrestrial Applications, NASA Headquarters, Washington, D.C.

Session Organizer: Ray L. Gilbert, Technology Transfer Division, Office of Space and Terrestrial Applications, NASA Headquarters, Washington, D.C.

1. “The Planned Happenings”
Norman Ryker, President, Rocketdyne Division, Rockwell International, Downey, CA

Dr. Ida R. Hoos, Research Sociologist, Space Science Laboratory, University of California
Office of Space and Terrestrial Applications, NASA Headquarters, Washington, D.C.

   Dr. Jeffrey D. Rosendahl, Astrophysics Division, Office of Space Science, NASA Headquarters, Washington, D.C.

3. “A European Approach to the Utilisation of Spacelab”
   Dr. George Haskell, Director, Planning and Future Programs, Headquarters, European Space Agency

   Joseph Fuller, Jr., Shuttle Spacelab Payloads Project, NASA, Goddard Space Flight Center, Greenbelt, MD

5. “Space Platform for NASA—Opportunity of Pitfall?”
   LT COL William Cuneo, Jr., USAF, on detail to the Office of Aeronautics and Space Technology, NASA Headquarters, D.C.
   Dr. Dell P. Williams, III, Director, Space Systems Division, Office of Aeronautics and Space Technology, NASA Headquarters, Washington, D.C.

PANEL SESSION AND SCIENCE FAIR AWARDS CEREMONY
8:00 p.m. to 9:30 p.m.)
Cocoa Beach Theater — Open to the Public

MEET THE ASTRONAUTS

Session Chairman: Lee R. Scherer, Center Director, NASA, Kennedy Space Center, FL

Robert L. Crippen, Prime Pilot, First Orbital Flight Tests, Space Shuttle “Columbia”
Joseph H. Engle, Pilot, Approach and Landing Tests, Space Shuttle “Enterprise”
Dr. Judith A. Resnik, Astronaut Candidate, Mission—Specialist, Space Shuttle Program

FRIDAY, APRIL 27

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

SPACE — EVERYONE BENEFITS

Session Chairman: Dr. George E. Mueller, Chairman and President, System Development Corp., Santa Monica, CA

Session Organizer: Donna Webb, Staff Assistant to Dr. Mueller

Dr. Peter A. Castruccio, President, Ecosystems International, Inc.
Dr. Klaus P. Heiss, President, ECON, Inc.
Mr. Richard A. Johnston, Program Manager, TIROS-N Data Processing Services Subsystem, System Development Corp., Santa Monica, CA

EXHIBITS (8:00 a.m. to 2:00 p.m.)
Cape Colony Convention Center

YOUTH SCIENCE FAIR (8:00 a.m. to 12 noon)
Beachside

MISSILE, SPACE AND RANGE PIONEERS
13th ANNUAL REUNION BANQUET
Beachside Gold Room

Cocktail Party — 7:00 p.m. to 8:00 p.m.
Banquet — 8:00 p.m.

Introduction: Barbara Payne, Program Chairman

Speaker: LT GEN Thomas P. Stafford
Deputy Chief of Staff
Research and Development
Headquarters, USAF

Tom Stafford is best remembered on the Space Coast as the pilot of Gemini VI, Commander of Gemini IX, Commander of Apollo X and as the Apollo Commander of the Apollo-Soyuz Test Project (ASTP) mission in 1975. In conjunction with ASTP, he made several trips to the Soviet Union and has maintained an ongoing awareness of the Russian Space Program. The topic of his address tonight is “The U.S./U.S.S.R. Space Program.”
The Sixteenth Space Congress is sponsored by the Canaveral Council of Technical Societies (CCTS). The Canaveral Council of Technical Societies is composed of the Cape Canaveral area affiliates of national, technical, and professional societies, and an academic advisory group from five colleges and universities operating locally, the Brevard Council, Inc., the Brevard County Commission, the School Board of Brevard County and the Brevard Economic Development Council.

CANAVERAL COUNCIL OF TECHNICAL SOCIETIES

Air Force Association
American Institute of Aeronautics and Astronautics
American Institute of Architects
American Institute of Industrial Engineers
American Institute of Plant Engineers
American Meteorological Society
American Society of Civil Engineers
Society of Photogrammetry/Photo-Optical Instrumentation Engineers
American Society for Industrial Security
American Society for Quality Control
American Society for Training and Development
American Welding Society
Armed Forces Communication Electronics Association
Coalition of Aerospace Professional Engineers
Florida Engineering Society
Institute of Electrical and Electronic Engineers
Instrument Society of America
Missile, Space and Range Pioneers, Incorporated
National Contract Management Association
Society of American Military Engineers
Society of Logistics Engineers
Society for Technical Communication

ACKNOWLEDGEMENTS

The Sixteenth Space Congress gratefully acknowledges the special support of the following organizations:

Air Force Eastern Test Range
Barnett Bank
Beachside Motel
Boeing Services International
Brevard Community College
School Board of Brevard County
Cape Colony Quality Motel
Cocoa Beach Theatre & Draft House
Communicable
Duncan Mens Wear
Guest Realty, Inc.
Florida Institute of Technology
Florida TV Cable, Inc.
Harris Electronics
IBM
Martin Marietta Aerospace
McGregor & Werner, Inc.
National Aeronautics and Space Administration
Newspapers: SUN, BREVARD SENTINEL, SENTINEL STAR, and TODAY
Osceola Groves
Planning Research Corporation
Radio Stations: WEZY, WKKO, WMFL, WMMB, WCKS, WMOD, WRMF, WWBC, WFIT, WRKT
Rockwell International Corporation
Bob Steele Chevrolet
Sullivan Victory Groves
Technicolor
Television Stations: WESH-TV, WDBO-TV, WFTV, WMFE-TV, WFTV, WTYJ-TV, KHOU-TV, WPTV-TV, WMGH-TV, WAAY-TV
United National Bank of Cocoa Beach
PROGRAM SUMMARY

MONDAY, April 23
3:00 p.m. PRESS CONFERENCE – Beachside Gold Room

TUESDAY, April 24
12:00 Noon REGISTRATION DESK OPENS – Beachside Lobby

WEDNESDAY, April 25
7:30 a.m. AUTHORS’ BREAKFAST – Cape Colony
8:00 a.m. REGISTRATION DESK OPENS – Beachside Lobby
YOUTH SCIENCE FAIR – Beachside
EXHIBITS – Cape Colony Convention Center
8:30 a.m. KEYNOTE ADDRESS – Cocoa Beach Theater
9:00 a.m. PANEL SESSION: STS UPDATE – Cocoa Beach Theater
1:30-4:30 p.m. PAPER SESSIONS
SHUTTLE UPDATE – Cocoa Beach Theater
DOD INITIATIVES IN SPACE – Beachside Gold Room
7:00 p.m. COCKTAIL PARTY – Beachside Gold Room
8:00 p.m. SPACE CONGRESS BANQUET – Gold Room

THURSDAY, April 26
7:30 a.m. AUTHORS’ BREAKFAST – Cape Colony
8:00 a.m. REGISTRATION DESK OPENS – Beachside Lobby
YOUTH SCIENCE FAIR – Beachside
EXHIBITS – Cape Colony Convention Center
8:30-11:30 a.m. PAPER SESSIONS
SPACELAB – Cocoa Beach Theater
TECHNOLOGY TRANSFER – Beachside Gold Room
12:00 Noon SPACE CONGRESS LUNCHEON – Gold Room
2:00 p.m. PAPER SESSIONS
SPACE COMMERCIALIZATION – Cocoa Beach Theater
PAYLOADS – Beachside Gold Room
5:00 p.m. EXHIBITORS’ COCKTAIL PARTY – Cape Colony
8:00 p.m. PANEL SESSION: MEET THE ASTRONAUTS and SCIENCE FAIR AWARDS CEREMONY – Cocoa Beach Theater

FRIDAY, April 27
7:30 a.m. AUTHORS’ BREAKFAST – Cape Colony
8:00 a.m. REGISTRATION DESK OPENS – Beachside Lobby
YOUTH SCIENCE FAIR – Beachside
EXHIBITS – Cape Colony Convention Center
8:30 a.m. PANEL SESSION: SPACE – EVERY-ONE BENEFITS – Cocoa Beach Theater
7:00 p.m. MISSILE, SPACE AND RANGE PIONEERS 13TH ANNUAL REUNION BANQUET – Beachside Gold Room