

Space Congress Programs

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1977 Fourteenth Space Congress Program

Canaveral Council of Technical Societies

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FOURTEENTH

PROGRAM

COCOA BEACH, FLORIDA • APRIL 27, 28, 29

FOURTEENTH SPACE CONGRESS COMMITTEE

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PROGRAM

G. R. Faenza McDonnell Douglas

SPECIAL ARRANGEMENTS

Col. R. C. Kormondy Air Force Eastern Test Range

EXHIBITS

L. E. Jensen Bendix

PUBLICITY

Chuck Morley

REGISTRATION AND MAILING

J. F. Hamm Planning Research Corporation

LOCAL ACCOMMODATIONS

W. M. Lohse NASA, Kennedy Space Center

LOCAL SUPPORT

J. A. Raymond Harris Electronics Systems

FINANCE

B. P. Duffey First National Bank
of Cape Canaveral

PUBLICATIONS AND GRAPHICS

U. Nickle Boeing Company

SCIENCE FAIR

C. A. Brosius Brevard County School Board

RECORDING SECRETARY

Shirley Lewis IBM

LEGAL

M. Kirschenbaum Attorney

CCTS

A. Belefant Belefant Associates, Inc.

PIONEERS

R. D. Hill, Jr. McDonnell Douglas

CHAIRMAN'S MESSAGE



The Fourteenth Space Congress, developed with the theme, "Space Technology for Better Living," is first and foremost an outstanding technical conference. It is designed to present the latest advances in aerospace technology in an environment most conducive to information exchange. Our program this year has technical paper sessions at five different periods to allow you maximum participation. The responsible program managers will discuss the status of the Shuttle Program, with particular focus on Payloads and on Ground Operations. We will cover a variety of other topics ranging from a review of the Viking Program to spinoff applications, from advanced technology to communications satellites. The international flavor of previous Congresses will be retained. The interest evidenced in Solar Energy last year has clearly earned it a place in this year's program.

We have retained the format of complementing the technical presentations of the paper sessions with broad-ranging, highly interactive panel sessions. This year we will have two panel sessions, one addressing probable developments in the Space Program over the last ten years and the other looking at near-term benefits of the Space Program as well as its long-term future. As before, panel members will be leaders in government, industry and universities.

But the Space Congress is not exclusively technical. You will have the chance to relax at the banquet on Wednesday evening and the luncheon Thursday, as well as the informal gatherings after the technical sessions are completed. You can renew old acquaintances through the traditional Space Pioneers reunion. Florida in late spring is a wonderful place to visit. Disney World and other nearby attractions have made central Florida one of the country's most popular vacation spots. Beautiful beaches and brilliant sunshine offer perfect relaxation. More extended vacation plans might include a cruise to the Caribbean Islands.

Plan now to join us in April.

Dr. J. W. Hugus
General Chairman
Fourteenth Space Congress

GENERAL INFORMATION

HEADQUARTERS/REGISTRATION

Headquarters for the Fourteenth Space Congress is the Beachside Motel, Cocoa Beach. Headquarters's office is Room 104 and the telephone number is (305) 783-6631.

Registration will take place in the Beachside Lobby starting at 12 noon Tuesday, April 26, for early arrivals. Registration will continue on Wednesday through Friday from 8:00 a.m. to 5:00 p.m. The telephone number for the Registration Desk is (305) 783-6055.

The following choices are available to registrants:

PACKAGE REGISTRATION	\$35.00
(includes four items listed below)	
Wednesday Banquet	10.00
Thursday Luncheon	4.00
Proceedings	10.00
Registration	15.00

The Package Registration will save you money; however, each item may be purchased individually at the regular price. Proceedings will be offered in individual papers with each paper costing \$1.00.

PRESS ROOM

Press Headquarters is in Room 106 of the Beachside Motel. The Press Room will be open from 8:00 a.m. to 5:00 p.m. Wednesday through Friday. The telephone number for the Press Room is (305) 783-5762.

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 Lobby. During the Congress hours, calls to this center should be placed to (305) 783-6631. After session hours calls can be made to the Beachside operator at (305) 783-9441.

AUTO RENTALS

Reservations and rentals may be made with Avis, Econo-Car, Hertz and Jim Hooper on Cocoa Beach.

KENNEDY SPACE CENTER TOURS

Daily narrated bus tours are available from 8:00 a.m. to 4:30 p.m. with buses leaving approximately every 15 minutes. The bus tour takes about 2 hours and costs \$.50 for children 3-11 years, \$1.25 for 12-18 years, and \$2.50 for adults. All bus tours start from the NASA Visitor Information Center, Kennedy Space Center.

SIGHTSEEING

Bus tours to Walt Disney World and Sea World leave the Beachside each day between 9 and 9:15 a.m. and return at 8:00 p.m. The cost of tickets to Walt Disney World of \$16.95 for adults includes transportation, admission, monorail and tickets for nine rides. The price for children 3-11 years is \$11.50 and for 12-17 years is \$16.35. Tickets to Sea World cost \$7.65 for children 4-11 years and \$12.95 for over 12 years. Reservations one day in advance is required.

A large display of missiles such as the Titan, Thor, Minuteman, Snark, Pershing, Polaris, Bomarc and Matador may be seen at Patrick AFB on Highway A1A. One of the missile tracking ships is usually in port and may be seen on a ride through Port Canaveral. A complete visitor's handbook, "What to Do and See in the Cape Kennedy Area" is available from your motel free of charge.

SESSION LOCATIONS

Panel Sessions are held this year in the Cape Colony Convention Center across the street from the Fourteenth Space Congress Headquarters and the Cocoa Beach Theater one-half mile south of the Congress Headquarters.

Technical Paper sessions convene in the Beachside Gold Room, the Atlantis Beach Convention Center and the Cape Colony Convention Center.

The Wednesday Banquet will be held in the Beachside Gold Room at 7:30 p.m. and the Thursday Luncheon in the Atlantis Beach Convention Center at 12 Noon.

PROCEEDINGS

The Proceedings of the Fourteenth Space Congress will be available at the Registration Desk in the Beachside Lobby during the Space Congress for \$10.00 each. Individual papers are available for \$1.00 per copy at the Paper Sessions and the Registration Desk. After the close of the Space Congress, additional proceedings can be purchased for \$20.00 each plus postage from:

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

EXHIBITS

Exhibits of the Fourteenth Space Congress are located in the Atlantis Beach Convention Center.

The Exhibit Hall will be opened from 10:00 a.m. till 5:00 p.m. Wednesday, 10:00 a.m. till 10:00 p.m. Thursday and from 10:00 a.m. till 12 Noon Friday. Representatives of the exhibitors will be in attendance at all times to assist and inform visitors. The general public is invited to view the exhibits.

The telephone number of the Atlantis Beach Exhibit Hall is (305) 783-9431, extension 240.

EXHIBITORS

Boeing Company
Brevard Community College
Digital Equipment Corporation
Eastman Kodak
Federal Electric Corporation
IBM
Lockheed Missiles & Space Company
Lykes Electronics
McGraw Hill/CREI
NASA
PRC
Rockwell International
Singer Corporation
SPAR
TRW
United Technology Corporation
World Sales Organization

YOUTH SCIENCE FAIR

Regional Youth Science Fair displays and demonstrations will be open to the public daily at the Atlantis Lower Lobby. The exhibits will be judged and awards will be presented at the Cape Colony Convention Center on Friday at 12:15 p.m.

PIONEERS DAY

The Missile, Space and Range Pioneers' Eleventh Annual Reunion will be held on Friday, April 29. A Cocktail Hour scheduled at the Beachside Gold Room will begin at 6:30 p.m. to be followed by the Annual Reunion Banquet at 7:30 p.m. Banquet reservations cost \$7.50 per person and are available from Pioneer representatives located during the Congress in the Beachside Lobby.

Wednesday, April 27 — 8:30 to 11:30 a.m.
PANEL SESSION

NEAR TERM SPACE TECHNOLOGY FOR BETTER LIVING Cape Colony Convention Center

John Yardley, Associate Administrator for the Office of Space Flight, NASA Headquarters, Washington, D.C. — Panel Chairman.

Dr. Myron Malkin, Director, Space Shuttle Program, NASA Headquarters, Washington, D.C.

Kenneth P. Timmons, Project Manager, Space Telescope, Martin Marietta Aerospace, Denver Division, Denver, Colorado.

Roger Johnson, Assistant to the Director Manned Space, Grumman Aerospace, Bethpage, N.Y.

Ted K. Freeman, Spacecraft Branch Manager, Boeing Space Systems Division, Seattle, Washington.

Wednesday, April 27 — 1:30 to 4:30 p.m.
PAPER SESSIONS

THE SHUTTLE PROGRAM Beachside — Gold Room

Session Chairman: Dr. Myron S. Malkin, Director Space Shuttle Program, NASA Headquarters, Washington, D.C.

1. "Space Shuttle Program Progress Report" — Robert F. Thompson, Manager, Space Shuttle Program, NASA, Johnson Space Center, Houston, TX.
2. "Space Shuttle Main Engine" — James R. Thompson, Jr., Manager, Space Shuttle Main Engine Project, NASA, Marshall Space Center, Huntsville, AL.
3. "Orbiter Thermal Protection System Development" — David H. Greenshields, Assistant Chief, Structures and Mechanics Division, NASA, Johnson Space Center, Houston, TX.
4. "Approach and Landing Testing" — Donald K. Slayton, Manager, Approach and Landing Test, NASA, Johnson Space Center, Houston, TX.

5. "Shuttle Avionics Software Development Concepts" — David R. Proctor, Assistant to the Vice President, Space Shuttle Programs, IBM — Federal Systems Division, Houston, TX.

SPIN-OFF APPLICATIONS Atlantis Beach Convention Center

Session Chairman: Herbert J. Rowe, Associate Administrator for External Affairs, NASA Headquarters, Washington, D.C.

1. "NASA Technology Utilization Program Overview" — Louis N. Mogavero, Director, Technology Utilization Office, NASA, Washington, D.C.
2. "A NASA Mechanism to Transfer Technology to Industry" — Edmond Howie, Director, Knowledge Availability System Center, University of Pittsburgh, Pittsburgh, PA.
3. "Establishing Effective Working Relations with a Potential User Community — NASA Lewis Research Center Experience" — Paul Foster, Chief, Technology Utilization, NASA, Lewis Research Center, Cleveland, Ohio.
4. "The Principles of Cost Benefit Analysis of Space Technology Utilization" — Dr. Robert J. Anderson, Jr., Vice President and Director of Economics, Mathtech, Inc., Princeton, NJ.
5. "Automicrobic SystemTM — One Step Farther" — Robert C. Mattaline, Marketing Manager, McDonnell Douglas Astronautics Company — East, St. Louis, MO.

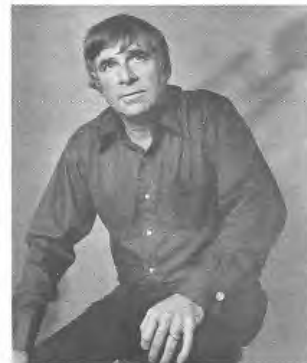
Wednesday Evening
SPACE CONGRESS BANQUET
Beachside — Gold Room
6:00 to 7:15 p.m. — Cocktail Party
7:30 p.m. — Banquet

INTRODUCTION: Dr. Jack W. Hugus, General Chairman

SPEAKER: Gene Roddenberry, Creator of STAR TREK

The name: Gene Roddenberry conjures up visions of intergalactic travel, distant planets, alien beings, transporters, phasers, the dauntless Captain Kirk, his Vulcan First Officer Mr. Spock, the lovely Lt. Uhura, Scotty, "Bones" McCoy, Sulu, or to sum it up in two words: STAR TREK.

The success of this phenomenal television series, which besides spawning a veritable cult of "Trekkies" across the land, won science fiction's coveted Hugo Award, had one of its episodes placed in the Smithsonian Institute, and influenced the naming of the first Space Shuttle "Enterprise", is rivaled only by its creator's history. Mr. Spock would have called it "fascinating".



Eugene Wesley Roddenberry was born in El Paso, Texas, the son of a master sergeant in the cavalry at Fort Bliss. At the age of two, he and his family moved to Los Angeles where he was to complete his schooling. This included pre-law at Los Angeles City College, and engineering at UCLA. While in college, he qualified for his pilot's license and when the U.S. entered World War II, Gene enlisted in the Army Air Corps as a cadet. At Kelly Field, Texas, he emerged as a second lieutenant and was sent to Guadalcanal where he flew against Bougainville and was in the Munda invasion (in all, 89 missions and sorties). It was while he was in the Pacific that he began to write. He sold stories to flying magazines and later poetry to *Embers* and *The New York Times*. Some of his poetry was included in an anthology edited by John Smithers.

Gene returned to the U.S. as a trouble shooter for the Air Staff in Washington, D.C., investigating air crashes. When the war ended, he joined Pan American Airways and flew runs to Casablanca, Lisbon, London, Johannesburg, and finally to Calcutta on their round-the-world schedule. When he wasn't flying, he lived in New York and studied literature at Columbia University. During this period, he received a Civil Aeronautics commendation for his efforts during and after a plane he was flying lost two engines, caught fire and crashed at night in the Syrian Desert.

His interest in television had been growing and he decided to quit flying and move to Hollywood. There were few openings for writers, however, so he joined the Los Angeles Police Department to gain experience valuable to a writer. He made sergeant, and was assigned to Chief William Parker's office to work on research and write the Chief's speeches, all the while submitting scripts to production companies, which were now beginning to buy them. When he felt he was established as a TV writer, he turned in his badge.

In this time period he wrote scripts for such shows as "Goodyear Theater", "The Kaiser Aluminum Hour", "Four Star Theater", "Dragnet", "The Jane Wyman Theater", "Naked City", and "Have Gun, Will Travel". His first script for "Have Gun, Will Travel", "Helen of Abiginian" won the Writer's Guild Award and was distributed to other writers to use as a model. Gene spent two years as head writer for "Have Gun. . .".

His first crack at producing was "The Lieutenant", a series he created for MGM about the Marines. Then came STAR TREK and the rest is legend.

Gene's production company, Norway Productions is currently working with Paramount Pictures on a feature-length motion picture version of STAR TREK for theatrical release. In addition, "Spectre", a two-hour motion picture he wrote for television, began location filming in London, England, January, and will be aired later this year on NBC. There are also several other projects in various stages of production.

Mr. Roddenberry has served as a member of the Writers' Guild Executive Council and a Governor of the Television Academy of Arts and Sciences. He belongs to the Explorers Club of New York City, the ACLU, and holds an honorary Doctorate in Humane Letters from Emerson College at Boston.

Twice a father and grandfather from a previous marriage, Gene married Majel Barrett, who played STAR TREK's Nurse Christine Chapel, in 1969 and they have a 3 year old boy, Gene, Jr.

Thursday, April 28 — 8:30 to 11:30 a.m.

PAPER SESSIONS

SHUTTLE PAYLOADS Beachside — Gold Room

Session Chairman: William Goldsby, Jr., Director, Payload Analysis and Mission Planning, NASA Headquarters, Washington, D.C.

1. "Early Spacelab Missions" — Robert E. Pace, Jr., Mission Manager, Spacelab 1 and Harry G. Craft, Jr., Assistant Mission Manager, Spacelab 1, NASA, Marshall Space Center, Huntsville, AL.
2. "Shuttle Impact on Commercial Communications Satellites" — F. H. Esch, Director, Spacecraft Laboratory and C. J. Pentlicki, Manager, Mechanical Design Department, COMSAT Laboratories, Clarksburg, MD.
3. "NASA's Standard Spacecraft for Free Flying Shuttle Payloads" — Robert O. Bartlett, System Engineer, Multimission Modular Spacecraft, NASA, Goddard Space Flight Center, Greenbelt, MD.
4. "STS Upper Stages Operations" — Marion D. Kitchens and A. Dan Schnyer, Upper Stages Office, NASA Headquarters, Washington, D.C.
5. "NASA Policy on Pricing Shuttle Launch Services" — Jon Michael Smith, Director, Pricing, Launch Agreements and Customer Service Engineering, NASA, Washington, D.C.

SOLAR APPLICATIONS Cape Colony Convention Center

Session Chairman: Dr. Erich A. Farber, Director, Solar Energy and Energy Conversion Laboratory, University of Florida, Gainesville, Florida.

1. "Solar Energy, Its Conversion and Utilization" — Dr. Erich A. Farber, Director, Solar Energy and Energy Conversion Laboratory, University of Florida, Gainesville, FL.
2. "The University of Florida Solar House" — Dr. Herbert A. Ingly, Assistant Professor, Solar Energy and Energy Conversion Laboratory, University of Florida, Gainesville, FL.
3. "Solar Properties of Materials and Testing of Solar Systems" — Clayton A. Morrison, Associate Professor, Solar Energy and Energy Conversion Laboratory, University of Florida, Gainesville, FL.
4. "Solar Cooling of a Florida Welcome Station, A Demonstration" — Dr. Gerald W. Lowery, Director, Research, Development and Demonstration Division, Florida Solar Energy Center, Cape Canaveral, FL.
5. "Energy Initiatives — In Florida and Elsewhere" — Marvin M. Yarosh, Director, Energy Systems Analysis Division, Florida Solar Energy Center, Cape Canaveral, FL.

SPACE CONGRESS LUNCHEON
Thursday – 12 Noon
Atlantis Beach Convention Center

Thursday, April 28 – 2:00 to 5:00 p.m.

PAPER SESSIONS

INTRODUCTION: Dr. Jack W. Hugus, General Chairman

SPEAKER: Major General John C. Toomay, Deputy Chief of Staff for Development Plans, Headquarters Air Force Systems Command, Andrews Air Force Base, Washington, D.C.

Major General John C. Toomay splendidly exemplifies the enlisted man who rises from the ranks through achievement. He entered the Army Air Corps as a private in 1943 during World War II, spending fourteen months commanding an isolated outpost in Greenland, finally leaving active duty with the rank of first lieutenant.



His rest was short-lived, however, as he was recalled to active duty in 1950 by reason of the Korean War. For the next seven years he was assigned to what is now Air Force Communications Service and served in the United States, Japan, and Hawaii as a Cryptographic officer.

His career then turned toward research and development, his assignments more than completing his orbit of the world.

At Rome Air Development Center (RADC) in New York, he was Program Manager of two major radar programs. The Trinidad Radar and the FPS-85 Space Track Radar. He next spent four years as a program manager in the Advanced Research Projects Agency (ARPA), managing various advanced ballistic missile defense radar programs. At the Space and Missile Systems Organization (SAMSO), he headed the technology program developing advanced re-entry systems for the strategic missile forces. In the early seventies, he returned to RADC as Deputy Commander and later Commander of the Center. He then served for three years as Military Assistant to the Deputy Director of Strategic and Space Systems in the Office of the Director of Defense Research and Engineering. In 1975 he was appointed Deputy Director of Development and Acquisition on the Air Staff. Three months later, he was Director. John C. Toomay was promoted to the rank of Major General on February 6, 1976, and as you can see is still going strong.

His military decorations and awards include the Distinguished Service Medal, Legion of Merit with one oak leaf cluster and the Meritorious Service Medal with one oak leaf cluster.

A graduate of the Industrial College of the Armed Forces and the Air Command and Staff College, General Toomay also holds two bachelor degrees from the University of Southern California and the University of the Pacific, plus a master's degree from The George Washington University. He is a member of Tau Beta Pi, and has co-authored more than 25 published technical reports, studies, and papers.

A native Californian, he and his wife, the former Virginia May Sadler of Wasco, have four children.

INTERNATIONAL AEROSPACE PROGRAMS
Atlantis Beach Convention Center

Session Chairman: Heinz Stoewer, European Space Agency, Domeinwig, Noordwijk, The Netherlands.

1. "Transatlantic Cooperation: A European Industry Viewpoint (with Special Emphasis on Spacelab)" – Hans Hoffman, Managing Director - Technical, ERNO, Bremen, Germany.
2. "International Cooperation in Space: A Canadian Industrial Viewpoint" – John P. MacNaughton, Vice President and General Manager, RMS Division, Spar Aerospace Products Ltd., Toronto, Ontario, Canada.
3. "Transatlantic Cooperation: A U.S. Industrial Viewpoint (with Special Emphasis on the Spacelab Payload Integration Contract)" – Ed Bonnett, McDonnell Douglas Astronautics Co., Huntington Beach, CA.
4. "ESA Transatlantic Programs: Overview and Experience Report" – W. Mellors, European Space Agency (ESA), Head of ESA Washington Office, Washington, D.C.
5. "International Cooperation from a U.S. Congressional Point of View" – Submitted by The Honorable Lou Frey, Jr., U.S. House of Representatives, Washington, D.C.

ADVANCED TECHNOLOGY
Beachside – Gold Room

Session Chairman: Hal Becker, Vice President and Treasurer, The Futures Group, Glastonbury, CT.

1. "Possible Commercial Use by the Ethical Pharmaceutical Industry of the Space Environment" – Charles J. Wiley, Corporate Planning and Development Manager, Hoffmann-LaRoache, Inc.
2. "Space Flight Opportunities for Industry" – James F. Madewell, Director of Advanced Systems, and Thomas S. Logsdon, Technical Staff, Rockwell International, Downey, CA.
3. "Advanced Concepts" – Ivan Bekey, Director of Advanced Space Studies, The Aerospace Corporation, Los Angeles, CA.
4. "Space – A Place of Commerce" – Honorable Donald Fuqua, U.S. House of Representatives, Washington, D.C.
5. "Commercial Operation of Communications Satellites" – George A. Lawler, Director of Marketing, COMSAT Corporation, Washington, D.C.

FREE
Thursday Evening — 7:00 to 10:00 p.m.
PANEL SESSION

BEYOND THE NEAR TERM
Cocoa Beach Theater

Jesco Von Puttkamer, Senior Staff Scientist, Advanced Programs Office of Space Flight, NASA Headquarters, Washington, D.C. — Panel Chairman.

Gene Roddenberry, Creator of STAR TREK.

Nichelle Nichols, Lt. Uhura in STAR TREK.

Dr. Kraft A. Ehrlicke, Scientific Advisor and Program Manager, Rockwell International Space Division, Downey, California.

Dr. Harry L. Wolbers, Chief Systems Engineer, Space, McDonnell Douglas Astronautics Company, Huntington Beach, California.

Friday, April 29 — 8:30 to 11:30 a.m.
PAPER SESSIONS

SHUTTLE LAUNCH SITE OPERATIONS
Beachside — Gold Room

Session Chairman: Chester M. Lee, Director, Space Transportation Systems Operations, NASA, Washington, D.C.

1. "Launch Processing System Transition from Development to Operation" — Henry C. Paul, Director, Electronic Engineering, NASA, Kennedy Space Center, FL.
2. "STS Ground Operations at Vandenberg Air Force Base" — Captain Gordon J. Ducote, USAF, Manager, STS Launch Systems, Vandenberg Air Force Base, CA.
3. "Protecting Proprietary Rights — A Potential Shuttle User's View" — John B. Day, Senior Researcher, Battelle Columbus Laboratories, Columbus, OH.
4. "User Access to the National Space Transportation System" — H. Eugene McCoy and W. B. Shapbell, Jr., Payload Integration Office, NASA, Kennedy Space Center, FL.
5. "Shuttle's 160 Hour Ground Turnaround — A Design Driver" — Fritz Widick, Chief, Orbiter Processing Branch, NASA, Kennedy Space Center, FL.

UNMANNED SPACE PROGRAMS
Atlantis Beach Convention Center

Session Chairman: Dr. Albert C. Vosburg, Deputy for Strategic and Space Systems, Office of the Assistant Secretary of the Air Force (R&D), Washington, D.C.

1. "NAVSTAR/Global Positioning System: Ionospheric Effects" — Colonel Bradford W. Parkinson, Program Manager, HQ, SAMS, AFSC, USAF, Los Angeles, CA., and Edward M. Lassiter and C. K. Cretcher, The Aerospace Corporation, Los Angeles, CA.
2. "A Viking Update" — Dr. Gerald A. Soffen, Viking Project Scientist, NASA, Langley Research Center, Hampton, VA.

3. "An Operational Earth Resources Satellite System: The LANDSAT Follow-On Program" — William G. Stroud, Acting Associate Director, Applications Directorate, NASA, Goddard Space Flight Center, Greenbelt, MD.
4. "Climate Observations from Space" — Dr. James Hansen, Head of Planetary Programs, Goddard Institute for Space Studies, New York, N.Y.
5. "SEASAT-A: A Project Overview" — W. Eugene Giberson, SEASAT-A Program Manager, NASA, Jet Propulsion Laboratory, Pasadena, CA.

Friday, April 29 — 12:15 to 1:00 p.m.

YOUTH SCIENCE FAIR
AWARDS CEREMONY
Cape Colony Convention Center

INTRODUCTION: Craig Brosius, Science Fair Chairman

AWARDS

PRESENTATION: Dr. Jack W. Hugus, General Chairman

The Youth Science Fair Exhibits will have been judged during the Congress by a select panel with expertise in their scientific field. The public is invited to attend this ceremony.

Friday, April 29 — 1:00 to 5:00 p.m.

SELECTED PAPERS SESSION
Cape Colony Convention Center

INTRODUCTION: Dr. Jack W. Hugus, General Chairman

Presentation of selected papers from all sessions (8 maximum) which exemplify Space Congress theme.

Friday Evening — 7:30 p.m.
MISSILE, SPACE AND RANGE PIONEERS
11TH ANNUAL REUNION BANQUET
Beachside — Gold Room

The Missile, Space, and Range Pioneers are proud to present noted author, lecturer, and sometime humorist Martin Caidin. Mr. Caidin is perhaps best known for his novel "Cyborg" on which the popular television series "The Six Million Dollar Man" is based. An avid pilot, Mr. Caidin is a member of the Confederate Air Force and has won many awards with his restored Junkers JU-52, a World War II German aircraft believed used by Hitler. Mr. Caidin's presentation tonight has the ubiquitous title: "The Uninspired Athletic Supporter".

SPONSOR

The Fourteenth Space Congress is sponsored by the Canaveral Council of Technical Societies (CCTS). The Canaveral Council of Technical Societies is composed of the Cape Kennedy area affiliates of twenty-three national technical and professional societies and an academic advisory group from five college and universities operating locally, the Brevard Council, Inc., the Brevard County Commission, the Brevard County School Board and the Brevard Economic Development Council.

The Brevard County area unit of each of the following organizations is a member of the Canaveral Council of Technical Societies:

Air Force Association

American Institute of
Aeronautics & Astronautics

American Institute of
Plant Engineers

American Meteorological Society

American Society of
Civil Engineers

American Society of
Mechanical Engineers

American Society of
Photogrammetry/Photo-Optical
Instrumentation Engineers

American Society of
Safety Engineers

American Society for
Industrial Security

American Society for
Quality Control

American Society for
Training & Development

American Welding Society

Armed Forces Communication
Electronics Association

Florida Engineering Society

Institute of Electrical
and Electronic Engineers

Instrument Society of America

Marine Technology Society

Missile, Space and Range
Pioneers, Incorporated

National Association of
Power Engineers, Inc.

National Contract
Management Association

Society of American
Military Engineers

Society of Logistics Engineers

Society for
Technical Communication

ACKNOWLEDGEMENT

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

Air Force Eastern Test Range

Atlantis Beach Lodge

Beachside Motel

Bendix

Boeing Company

Brevard Community College

Brevard County School System

Cape Colony Inn

First Bank of Rockledge

First National Bank of Cape Canaveral

First National Bank of Titusville

Harris Electronics

IBM

McDonnell Douglas

National Aeronautics and Space Administration

Newspapers: SUN, BREVARD SENTINEL, ORLANDO
SENTINEL, SENTINEL STAR & TODAY

Osceola Groves

PRC

Radio Stations: WEZY, WKKO, WMEL, WMMB, WRKT,
WRMF & WWBC

Ramons

Bob Steele Chevrolet

Sun Bank of Cocoa

Sun First of Melbourne

Sullivan Victory Groves

Television Stations: WCKS-TV, WESH-TV, WDBO-TV,
WFTV & WMFE-TV

United National Bank of Cocoa Beach

PROGRAM SUMMARY

Wednesday, April 27

Panel: Near Term – Space Technology for Better Living	8:30 to 11:30 a.m.	Cape Colony Convention Center
Shuttle Program	1:30 to 4:30 p.m.	Beachside Gold Room
Spin-Off Applications	1:30 to 4:30 p.m.	Atlantis Beach Convention Center
Cocktail Party	6:00 to 7:30 p.m.	Beachside Gold Room
BANQUET Speaker: Gene Roddenberry, Creator of STAR TREK	7:30 p.m.	Beachside Gold Room

Thursday, April 28

Shuttle Payloads	8:30 to 11:30 a.m.	Beachside Gold Room
Solar Applications	8:30 to 11:30 a.m.	Cape Colony Convention Center
LUNCHEON Speaker: Maj. Gen. John C. Toomay, Dep. Chief. of Staff for Development Plans, Andrews AFB.	12:00 to 1:30 p.m.	Atlantis Beach Convention Center
International Aerospace Programs	2:00 to 5:00 p.m.	Atlantis Beach Convention Center
Advanced Technology	2:00 to 5:00 p.m.	Beachside Gold Room
Exhibitors Cocktail Party	5:00 to 7:00 p.m.	Atlantis Beach Convention Center
Free Panel: Beyond the Near Term	7:00 to 10:00 p.m.	Cocoa Beach Theater

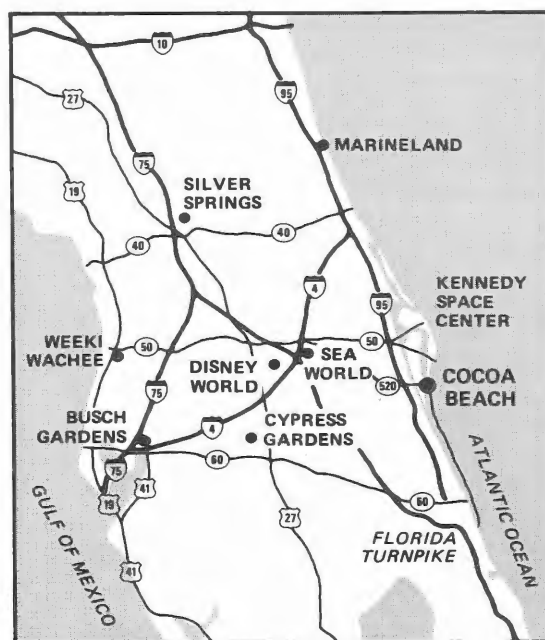
Friday, April 29

Shuttle Launch Site Operations	8:30 to 11:30 a.m.	Beachside Gold Room
Unmanned Space Program	8:30 to 11:30 a.m.	Atlantis Beach Convention Center
Science Fair Awards Ceremony	12:15 to 1:00 p.m.	Cape Colony Convention Center
Selected Papers Session	1:00 to 5:00 p.m.	Cape Colony Convention Center
Missile, Space & Range Pioneers Cocktail Party	6:30 p.m.	Beachside Gold Room
11TH ANNUAL REUNION BANQUET	7:30 p.m.	Beachside Gold Room

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 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 – or the daily water ski revue with beautiful aquamaids at Cypress Gardens.

THE MAP BELOW GIVES THE EXACT LOCATION OF EACH ATTRACTION.



NOTES





FOURTEENTH SPACE CONGRESS

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