NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Leslie Vock
305 867-2468

January 11, 1980

RELEASE NO: KSC 1-80

SPACEPORT BUS TOUR PATRONAGE REMAINS HIGH IN 1979

KENNEDY SPACE CENTER, Fla. - Over 1.2 million visitors took guided bus tours of NASA's John F. Kennedy Space Center adjacent Cape Canaveral Air Force Station in 1979, marking the third busiest year since the guided bus tours were initiated in 1966.

The 1,282,702 total was only .6 of one per cent lower than the 1978 figure of 1,289,653, the second busiest year. Tour bus patronage peaked at 1,389,049 in 1972, the year of the Apollo 16 and 17 missions which closed the nations manned lunar exploration program.

Last summer's gasoline shortage threw a temporary crimp in tour patronage. Increased, but more expensive fuel supplies brought a resurgence which pushed up the final figures for 1979 to near the total for the preceding year.

December is usually a busy month and held true to form in 1979 when 93,403 visitors took the guided bus tours, an increase of 4,048 over the same period in 1978.

The Kennedy Space Center's Visitors Center features a wide variety of dynamic and static exhibits, including a "rocket garden," science demonstrations and space movies. The only charge is made for the guided bus tours.

Accessible from U. S. Route 1, two miles south of Titusville on State Road 3 on Merritt Island, the Visitors Center is open every day of the year with the exception of Christmas.

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NASA News

National Aeronautics and
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AC 305 867-2468

IF.5 #17

Dick Young
305 867-2468

For Release:

January 11, 1980

RELEASE NO: KSC 2-80

NOTICE TO EDITORS/NEWS DIRECTORS

FLTSATCOM -C NEWS CONFERENCE SCHEDULED JANUARY 14

KENNEDY SPACE CENTER, Fla.--A pre-launch news conference on the FLTSATCOM-C mission will be held in the Conference Room of the E&O Building, Cape Canaveral Air Force Station, at 11 a.m. on Wednesday, January 16.

FLTSATCOM-C, third in a series of five military communications satellites, is to be launched by the Kennedy Space Center aboard an Atlas-Centaur rocket from Complex 36 on Thursday, January 17. The launch opportunity for that date extends from 8:26 to 9:54 p.m. EST.

Media representatives who plan to attend the FLTSATCOM-C news conference should be in the KSC News Center, Room 1207, Headquarters Building, no later than 10:30 a.m. on January 16. Transportation to and from the E&O Building will be provided.

On launch day, permanently badged press may proceed directly to Press Site 1 at Cape Canaveral Air Force Station. Others will be badged at the Cape Canaveral Air Force Station Pass and Identification Building on Florida Route 401 near the Cape's south gate beginning at 7 p.m. Press representatives should plan on clearing the gate no later than 7:45 p.m.

Launch commentary will be carried on the V-2 circuit from about T minus 1 hour until the end of powered flight and spacecraft separation approximately 29 minutes after liftoff. To obtain access to this audio circuit, merely dial the KSC Operator at 867-7110 and ask to be plugged into the V-2 circuit.

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# NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
305 867-2468

January 24, 1980

RELEASE NO: KSC 5-80

NOTICE TO EDITORS/NEWS DIRECTORS

## NOZZLE PLUG TESTS, BUDGET BRIEFING, AWARDS CEREMONY PLANNED AT KSC

KENNEDY SPACE CENTER, Fla.--A number of events open to coverage by the news media will be held at the Kennedy Space Center this week and next.

The remotely-controlled nozzle plug which will play a major role in the recovery of the solid rocket boosters from the Atlantic Ocean after a Space Shuttle launch will undergo testing in the Trident Basin at Cape Canaveral Air Force Station from January 24-26.

Press coverage of these tests has been scheduled for 10 a.m. on Friday, January 25. Media representatives who plan to cover the tests should be at the South Gate to Cape Canaveral Air Force Station by 9:30 a.m. on Friday. Members of the press with questions concerning the tests and their coverage should contact Roland Raab of our office at Area Code 305-867-2468.

A briefing on the NASA Fiscal Year 1981 budget will be open for press coverage in the KSC News Center, Room 1207, Headquarters Building, on Saturday, January 26, at 4 p.m. The budget briefing, conducted at NASA Headquarters, Washington, D. C., will be "piped" into the KSC News Center. Stories on the budget and its contents are embargoed for publication before 10 a.m. Monday, January 28, when the budget is scheduled for presentation to The Congress.

The Silver Snoopy Award will be presented to 65 KSC civil service and contractor employees by Center Director Richard G. Smith and Space Shuttle prime crew astronauts John Young and Robert Crippen in a ceremony to be held in the KSC Training Auditorium Monday, January 28, at 1 p.m.

-more-

The Silver Snoopy Award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance in manned space flight programs. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

Press representatives who plan to attend the awards ceremony should be at the KSC News Center by 12:30 p.m. on Monday, January 28.

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NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867 2468

I.F.S #17

For Release

Leslie Vock
305 867-2468

February 4, 1980

RELEASE NO: KSC 11-80

NEW SMYRNA BEACH RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.-- Alphonso D. Brown, a resident of New Smyrna Beach, Florida, and a 1954 graduate of Chisholm High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Brown was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Brown, a field supervisor for Unified Services, Inc., is responsible for supervising approximately 12 persons in general janitorial work. He has been at KSC since 1965 and attended Edward Waters Jr. College in Jacksonville, Florida for two years. He received a certificate in executive housekeeping in a 320-hour course at Daytona Beach Community College.

Brown and his wife, Dorothy, make their home in New Smyrna Beach with their daughter, Pamela.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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# NASA News

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National Aeronautics and
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**John F. Kennedy Space Center**
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February 4, 1980

RELEASE NO: KSC 12-80

FORMER ELIZABETH RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Alfredo J. Teran, a former resident of Elizabeth, New Jersey and a 1971 graduate of Thomas Jefferson High School in Elizabeth, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Teran was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Teran, a project engineer for the Vehicle Assembly Building, has been at KSC since July, 1975. He attended the Newark College of Engineering in New Jersey, and was graduated in 1975 with a bachelor's degree in mechanical engineering.

Originally from Cuba, Teran and his wife, Monica, currently make their home in Merritt Island, Florida.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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# NASA News

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Leslie Vock
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RELEASE NO: KSC 13-80

TITUSVILLE RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Saralyn E. Lamb, a 1955 graduate of Titusville High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Lamb was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Lamb, a Shuttle planner and scheduler for Wackenhut Services, Incorporated, is responsible for coordination between KSC fire services and NASA fire and rescue branch. She coordinates and monitors fire prevention and protection requirements and rescue operations for the overall Shuttle Transportation System. She has been at KSC since 1965 and attended Brevard Community College in Cocoa, Florida.

Lamb makes her home in Titusville, Florida, and was the recipient of the Second Level Manned Flight Awareness Award in 1968.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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RELEASE NO: KSC 14-80

EDGEWATER RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--James W. Inman, a resident of Edgewater, Florida, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Inman was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Inman, a training officer for Wackenhut Services, Incorporated, is responsible for conducting training for fire and security personnel. He served in the U.S. Air Force for 21 years and received many awards and decorations.

Inman and his wife, Genevieve, make their home in Titusville, Florida, and have three children.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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RELEASE NO: KSC 15-80

FORMER PENSACOLA RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Howard E. Wilkinson, a former resident of Pensacola, Florida, and a 1952 graduate of Pensacola High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Wilkinson was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Wilkinson, a senior engineer, is responsible for Orbiter Processing Facility (OPF) engineering, and completing the work platforms in the OPF high bays. The OPF is the hangar-like structure in which Space Shuttle orbiters are prepared for flights into Earth orbit. He attended the Gulf Coast Military Academy in Gulf Port, Mississippi, Pensacola Junior College in Florida, and the University of Alabama, where he studied engineering.

Wilkinson has been at KSC since 1974. He served in the U.S. Army for 8-1/2 years

Wilkinson and his wife, Beverly, make their home in Titusville, Forida, with their two daughters.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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RELEASE NO: KSC 16-80

FORMER NEWBERG RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Howard E. Gardner, a former resident of Newberg, Oregon, and a 1943 graduate of Newberg Union High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Gardner was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Gardner, a contract negotiator responsible for construction contracts in support of the Space Shuttle program, attended Northwest Nazarene College in Idaho and was graduated from the University of Oregon with a bachelor of arts degree in business administration in 1950. Gardner recently retired from NASA, which he joined in 1968. He had previous years of federal service in the U.S. Army.

Gardner and his wife, Dorothy, make their home in Oviedo, Florida, a small community near Orlando. They have two grown children.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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RELEASE NO: KSC 17-80

FORMER MIAMI RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Roy I. Gainer, a former resident of Miami, Oklahoma, and a 1960 graduate of Fairland High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Gainer was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Gainer is a senior space vehicle test mechanic whose responsibility is to assist engineering organizations in any task or job related to the Space Shuttle. He has been at KSC since 1966, and was previously in the U.S. Air Force for four years.

Gainer and his wife, Patricia, make their home in Titusville, Florida, with their five sons.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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FORMER CINCINNATI RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Paul E. Burke Jr., a former resident of Cincinnati, Ohio, and a 1962 graduate of Prospect High School in Mt. Prospect, Illinois, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Burke was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Burke, an aerospace technologist and a management systems analyst, is responsible for institutional research and development budget and data processing on NASA's resources planning staff. He has been at KSC since 1967 and attended the University of Illinois to complete his bachelor's degree in theoretical and applied mechanics in 1967. He received his master's degree in 1972 from Florida State University in Tallahassee.

Burke and his wife, Trudy, make their home in Cocoa, Florida, and have two young sons.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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RELEASE NO: KSC 19-80

TITUSVILLE RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--James E. Vevera, a former resident of Titusville, Florida, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Vevera was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Vevera, an operations project manager for Rockwell International, is responsible for technical management of special projects for Rockwell ground support systems and equipment installations. He is a 1951 graduate of the Geogia Institute of Technology in Atlanta, with a bachelor's degree in mechanical engineering. He had 27 months of flight training in the U.S. Air Force.

Vevera has received the Boeing Cost Improvement Award, the Bendix Skylab Proficiency Award and a NASA letter of commendation for launch equipment test facility activation.

Vevera and his wife, Marie, make their home in Titusville, Florida, and have three children.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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# NASA News

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National Aeronautics and
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Leslie Vock
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RELEASE NO: KSC 20-80

FORMER ADENA RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.-- Eugene Edward Yakubowski, a former resident of Adena, Ohio, and a 1956 graduate of Adena High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Yakubowski was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Yakubowski, a senior space vehicle test mechanic, is responsible for installation, maintenance and modification of all mechanical systems in the aft section of the orbiter. He has been at KSC since 1966 and received the Sustained Superior Performance Award during the Apollo program.

Yakubowski and his wife, Shirley, make their home in Titusville, Florida, and have two children.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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FORMER AMBRIDGE RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.-- John Sichak, a former resident of Ambridge, Pennsylvania, and a 1958 graduate of Ambridge High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Sichak was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Sichak, an operations engineer who is site manager for the Shuttle Landing Facility, has been at KSC since 1963. He was graduated in 1974 from Rollins College, Florida, with a bachelor's degree in electrical engineering. He previously served three years in the U.S. Army.

Sichak currently makes his home in Merritt Island, Florida.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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FORMER CINCINNATI RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--C. Michael Wiedemann, a former resident of Cincinnati, Ohio, and a 1962 graduate of Indian Hill High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Wiedemann was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Wiedemann, a lead mechanisms engineer for Rockwell International, is responsible for the test and checkout of Space Shuttle orbiter mechanisms. He attended the University of Florida in Gainesville and was graduated in 1968 with a bachelor's degree in mechanical engineering.

Wiedemann was the recipient of a Silver Snoopy award in 1975 for the Apollo Soyuz Test Project (ASTP) and the NASA Public Service Award for ASTP. He and his wife, Ursula, make their home in Titusville, Florida, and have two small children.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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RELEASE NO: KSC 23-80

FORMER CHANUTE RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.-- D.G. Hanson, a former resident of Chanute, Kansas, and a 1952 graduate of Chanute Senior High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Hanson was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Hanson, a lead engineer in the electrical power distribution system for Rockwell International, is responsible for launch operations and checkout of the orbiter electrical power distribution system. He attended Kansas State University in Manhattan, from which he was graduated with a bachelor's degree in electrical engineering in 1961. Hanson has been at KSC since July, 1978, and previously served three years in the U.S. Army.

He and his wife, Nancy, make their home in Cape Canaveral, Florida, and have two children.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle Program.

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Leslie Vock
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February 4, 1980

RELEASE NO: KSC 24-80

FORMER BRECON RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.-- John E. Cochran, a former resident of Brecon, Ohio, and a 1929 graduate of Mason High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Cochran was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Cochran, a principal engineer for Planning Research Corporation, is responsible for mechanical engineering on refrigeration design, environmental control systems, and heating and ventilation designs. He attended the Ohio Mechanics Institute in Cincinnati, from which he was graduated with an associate degree in electrical engineering in 1932.

Cochran and his wife, Evelyn, make their home in Satellite Beach, Florida, and have been in the area since 1959.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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February 4, 1980

RELEASE NO: KSC 25-80

COCOA RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Lee F. Stewart, a 1971 graduate of Cocoa High School in Florida, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Stewart was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Stewart, a senior program planner for Martin Marietta Operations and Planning, is responsible for scheduling the Space Shuttle orbiter's external tank processing and integrated flows. He also coordinates the support requirements. Stewart has been at KSC since 1977.

He attended the University of Helsinki in Finland for one and one-half years to study languages, and then attended Brevard Community College in Cocoa, Florida for a year of classes in business management.

Stewart and his wife, Marcia, make their home in Cocoa, Florida, and have one son.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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# NASA News

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National Aeronautics and
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**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Leslie Vock
305 867-2468

February 4, 1980

RELEASE NO: KSC 26-80

FORMER BROOKLYN RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Gregory A. DeBlasio, former resident of Brooklyn, New York, and a 1966 graduate of Copiague High School in Long Island, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, DeBlasio was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

DeBlasio, a senior engineer for Planning Research Corporation in fluid system design, cryogenic division, is responsible for the design and installation of the Fuel Cell Servicing System at the launch pad, the Orbiter Processing Facility, and the Vehicle Assembly Building. He has been at KSC since 1972.

DeBlasio attended the Florida Institute of Technology in Melbourne, and was graduated with a bachelor of science degree in mechanical engineering and space science in 1972.

He and his wife, Alice, make their home in Melbourne, and are expecting their first child in March.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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RELEASE NO: KSC 27-80

FORMER DOTHAN RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.-- Gail Hooper Snoddy, a former resident of Dothan, Alabama, and a 1971 graduate of Cottonwood High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Snoddy was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Snoddy, a programmer analyst for Computer Sciences Corporation, is responsible for work on the automated ground operations scheduling system. This system is an operational scheduling tool designed to support the rapid turnaround requirements of the Space Shuttle orbiter, cargo and ground support equipment.

Snoddy attended Troy State University in Alabama, from which she graduated in 1975 with a bachelor's degree in mathematics education, and in 1977 with a bachelor's degree in computer science. She is in the process of completing graduate study at the Florida Institute of Technology in Melbourne.

Snoddy and her husband, William, make their home in Merritt Island, Florida.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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February 4, 1980

RELEASE NO: KSC 28-80

FORMER MIAMI RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Larry D. Williams, a former resident of Miami, Florida, and a 1971 graduate of McArthur High School in Hollywood, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Williams was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Williams, a logistics material coordinator for United Space Boosters, Inc., is responsible for coordinating delivery of the solid rocket boosters and other flight hardware for KSC. He also prepares weekly reports to NASA on the status of flight hardware.

Williams attended David Lipscomb College in Nashville, Tennessee, for three years and studied speech and business. He and his wife, Teresa, make their home in Cocoa, Florida.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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February 4, 1980

RELEASE NO:
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FORMER MINEOLA, LONG ISLAND, RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Leonard Despang, a former resident of Mineola, Long Island, New York, and a 1955 graduate of Sewanhaka High, Floral Park, N.Y., has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Despang was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Despang, a process technician with United Space Boosters, Inc., is responsible for fabrication of cork insulation for portions of the Space Shuttle's solid rocket boosters. He spent four years in the U.S. Navy, and has been at KSC since 1978.

Despang and his wife, Judith, make their home in Cocoa, Florida, with their three daughters.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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# NASA News

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February 4, 1980

RELEASE NO: KSC 30-80

FORMER TRENTON RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--John L. Horan, Jr., a former resident of Trenton, New Jersey and a 1970 graduate of Northern Burlington County Regional High School in Columbus, N.J., has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Horan was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Horan, a senior analyst with Planning Research Corporation, is responsible for environmental control systems computer programs for the Space Shuttle. He was graduated from the Florida Institute of Technology in Melbourne with a bachelor of science degree in air commerce in 1974. He expects to complete his graduate study at FIT in 1981.

Horan is a past recipient of the NASA Group Achievement Award and the Silver Snoopy. He and his wife, Patricia, make their home in Merritt Island, Florida, with their young son.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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RELEASE NO: KSC 31-80

FORMER KEARNEY RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Larry D. Murrish, a former resident of Kearney, Nebraska, and a 1958 graduate of Longfellow High School in Kearney, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Murrish was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Murrish, a lead technician for RCA, is responsible for the utilities control system in the telemetrics division. He attended the University of Colorado in Boulder for a year and studied engineering. Murrish served in the U.S. Navy from 1959 through 1963 and received various commendations.

He and his wife, Martha, make their home in Merritt Island, Florida, and have four young sons.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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RELEASE NO: KSC 32-80

FORMER MONESSEN RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--James R. Clay, former resident of Monessen, Pennsylvania, and a 1949 graduate of Monessen High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Clay was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Clay, an audio installations supervisor for RCA, is responsible for supervising audio equipment installations and checkout. He attended Brevard Community College in Cocoa, Florida, and the University of Central Florida, Cocoa branch, to complete his bachelor's degree in electronic technology in 1973.

Clay has been at KSC since 1963 and received the astronaut's Silver Snoopy in December, 1970. He and his wife, Jane, make their home in Rockledge, Florida, and have three sons.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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RELEASE NO: KSC 33-80

FORMER KINGSPORT RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--David G. Shelton, a former resident of Kingsport, Tennessee, and a 1969 graduate of Lynn View High, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Shelton was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Shelton, a programmer/analyst for Computer Science Corporation, is the task leader of the initialization group of the simulation software branch. He attended the University of Tennessee in Knoxville and was graduated with a bachelor's degree in engineering physics in 1976.

Shelton make his home in Cocoa Beach, Florida, and has been at KSC since March, 1979.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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RELEASE NO: KSC 34-80

FORMER McROBERTS RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Hargis R. Branham, a former resident of McRoberts, Kentucky, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Branham was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Branham, an electrical/mechanical technician for McDonnell-Douglas Technical Services Co., is responsible for assembly, modification and testing in the Shuttle Cargo Division. He attended Brevard Community College in Melbourne, Florida, and served in the U.S. Army for two years.

Branham and his wife, Burnette, make their home in Melbourne, Florida, and have three grown children. Branham has been employed by McDonnell Douglas for 20 years.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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RELEASE NO: KSC 35-80

FORMER WAYCROSS RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Sanford B. Proveaux, former resident of Waycross, Georgia, and a 1973 graduate of Waycross High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Proveaux was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Proveaux, an aerospace engineer for McDonnell-Douglas Technical Services Co., in the Shuttle Cargo Division, is responsible for structural and mechanical engineering on the Spacelab program. Spacelab will be carried to and from space in the Shuttle's payload bay. It will provide specialists with a shirtsleeve environment in which to conduct scientific experiments and demonstrations while exposed to space. He attended Geogia Institute of Technology in Atlanta and was graduated in 1978 with a bachelor's degree in aerospace engineering. In 1977 he worked for the National Center of Space Studies in Toulouse, France, on an Earth observation satellite project for several months.

Proveaux makes his home in Titusville, Florida. He was transferred to KSC from the Marshall Space Flight Center in Huntsville, Alabama, in March 1979.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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## FORMER MADISON COUNTY RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Shirley Hawkins Brewer, a former resident of Gurley, Alabama, and graduate of Madison County High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Brewer was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Brewer, a department secretary in the Quality Assurance Office, is responsible for secretarial duties for a department of 120 personnel and for assigning jobs to clerk-typists. She is employed by United Space Boosters, Inc., and has been at KSC since October, 1977.

Brewer received a certificate in airline communications from the Central Technical Institute in Kansas City, Missouri, in 1955, and an associate of science degree in secretarial technology from Brevard Community College in Cocoa, Florida, in 1977.

She and her husband, Lawrence, who works for NASA/KSC Safety, make their home in Titusville, Florida. They have one son who is in the U.S. Marine Corps.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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RELEASE NO: KSC 37-80

FORMER BELLEVUE RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Sharon R. Cisewski, a former resident of Bellevue, Nebraska, and a 1948 graduate of Bellevue High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Cisewski was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Cisewsli is a resource management specialist with many responsibilities, including developing, activating and maintaining budget requirements, expenditures and cost systems. She has been with KSC since 1966 and has an associate degree in business from LaSalle Extension University in Chicago, Illinois. During her 13 years at KSC, Cisewski has received NASA's Sustained Superior Performance Award, the Outstanding Performance Award and the NASA Group Achievement Award. She has one grown son and makes her home in Cocoa Beach, Florida.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense needs.

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For Release:

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RELEASE NO: KSC 38-80

FORMER FLAT ROCK RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Donna Gail Hannas, a former resident of Hendersonville, North Carolina, and a 1967 graduate of East Henderson High School in Flat Rock, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Hannas was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Hannas, the former Donna Gail Young of Hendersonville, is an assistant supervisor responsible for computer programs for the Shuttle orbiter and assuring that computer programs and hardware changes are completed on the orbiter. She attended Western Carolina University in Cullowhee, North Carolina, and graduated in 1971 with a bachelor's degree in education. She did her graduate work at the University of Alabama, where she received a master's degree in counseling in 1973.

She and husband Charles make their home in Merritt Island, Florida, and she has been at KSC since June of 1978.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

The Kennedy Space Center is the prime launch and landing site for the versatile and reusable Space Shuttle which is scheduled to begin flights in Earth orbit in 1980. The Space Shuttle will provide routine and economical access to space for scientific, commercial and defense purposes.

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RELEASE NO: KSC 39-80

FORMER NASHVILLE RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Jerry W. Smith, former resident of Nashville, Tennessee, and 1970 graduate of Maplewood High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Smith was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Smith is a senior engineer responsible for modifying the launch pad 39A fire extinguishing and sound suppression water systems to prepare for the Shuttle's first launch. He graduated magna cum laude from Vanderbuilt University in Nashville, with a bachelor's degree in mechanical engineering, in 1974.

Smith and his wife, Patricia, make their home in Cocoa, Florida, with their 3-month-old son. He has been at KSC since 1975 and works for Planning Research Corporation.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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RELEASE NO: KSC 40-80

FORMER BETSY LAYNE RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--Virginia Ruth Cornett, a former resident of Betsy Layne, Kentucky, and a 1945 graduate of Betsy Layne High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Cornett was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Cornett is a lead word processing equipment operator for Planning Research Corporation and is responsible for scheduling, assigning and directing the work of word processing equipment operators, interfacing with customers and advising on data format, schedules and limitations of word processing equipment. She was graduated from the University of Kentucky in Lexington in 1946, Valencia College in Orlando, Florida, in 1971, and Brevard Community College in Melbourne, Florida, in 1972.

Cornett has been with PRC at Kennedy Space Center since 1974 and makes her home with her husband, Otis, in Indian Harbour Beach, Florida.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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FORMER SHEFFIELD RESIDENT WINS NASA'S "SNOOPY" AWARD

KENNEDY SPACE CENTER, Fla.--R. C. Gamble, a former resident of Sheffield, Alabama, and a 1946 graduate of Sheffield High School, has been presented with NASA's "Snoopy" award for individuals who have made outstanding contributions to manned space flight programs.

In a recent ceremony at NASA's Kennedy Space Center, Gamble was presented with a letter of commendation and a Silver Snoopy lapel pin by Center Director Richard G. Smith and Astronauts John Young and Robert Crippen, prime crew members for the Space Shuttle's first mission, scheduled for launch in 1980.

Gamble, a structural design engineer responsible for managing the structural design of checkout and launch facilities, attended Auburn University in Alabama and was graduated with a bachelor of science degree in civil engineering in 1951. He did his graduate work at Rollins College in Orlando, Florida and earned his master's degree in management in 1970. Gamble has been with NASA since 1964 and spent one year in the U.S. Army.

Gamble and his wife, Mary, make their home in Titusville, Florida, and have three grown children.

The Silver Snoopy award was originated early in the Apollo lunar exploration program to encourage and reward high quality job performance. Symbolized by the cartoon dog "Snoopy" in the Charles Schulz comic strip "Peanuts", the award has been revived to recognize quality levels of performance during the Space Shuttle program.

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IF.5 #17

Dick Young
KSC 44-80

For Release:

February 8, 1980

NOTICE TO EDITORS/NEWS DIRECTORS

NEWS CONFERENCE ON SOLAR MAXIMUM MISSION SCHEDULED FEBRUARY 13

KENNEDY SPACE CENTER, Fla.--A news conference on the Solar Maximum Mission scheduled for launch on Thursday, February 14, will be held on February 13.

The 5,200-pound Solar Maximum Mission spacecraft designed to study the sun during the peak of its 11-year cycle of activity will be launched on a Delta rocket on February 14 during a window extending from 10:57 to 11:06 a.m. EST.

The news conference will be held in the Conference Room of the E&O Building at Cape Canaveral Air Force Station on February 13 at 11 a.m. Launch and mission operations will be outlined by project officials.

News media representatives who plan to attend the news conference should be at the KSC News Center in the Headquarters Building no later than 10:30 a.m. Transportation to and from the E&O Building will be provided.

On launch day,media representatives with permanent badges may proceed directly to Press Site 1 at Cape Canaveral Air Force Station. Others will be badged at the Cape Canaveral Air Force Station Pass and Identification Building on Florida Route 401 near the Cape's south gate beginning at 9:30 a.m.

Launch commentary will be carried on the V-2 circuit from about T minus 1 hour until the end of powered flight and spacecraft separation approximately 80 minutes after liftoff.

Media representatives may monitor this commentary circuit by calling the KSC Operator at 867-7110 and asking to be patched into the V-2 circuit.

# # #

NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

IF.5 #17

For Release:

Roland Raab
305 867-2468

February 15, 1980

RELEASE NO: KSC 47-80

FLORIDIAN HAS LAST WORD AT ROCKET LAUNCHES

KENNEDY SPACE CENTER, Fla.--"T minus 70 seconds"..."Permission to launch?"

"GO!"

With this one word, Florida resident and graduate Charles Gay assumes final authority for the launch of a multimillion dollar spacecraft and its equally expensive booster rocket. It is not a job that comes easily.

Chuck came to Florida at age four, when the Cape was nothing but a mosquito infested strip of palmetto scrub separating the mile-wide Banana River from the ocean. He and his parents put down wide spreading roots in south Florida.

He grew up in West Palm Beach and attended Palm Beach Central High before graduating from Pompano Beach High School in 1948. His father, now deceased, owned and operated the Melaleuca Lodge in Jensen Beach, where his mother, Claire, now resides.

A stint in the Navy as an aviation electronics technician interrupted his studies at the University of Florida but kindled more than a spark of interest in aerospace. When Chuck returned to the Gainesville campus it was to complete a degree in industrial engineering.

By now the Cape was alive and literally breathing fire, and Chuck was honored as the first selectee in a new program to bring promising graduates into the space business. He was working with General Dynamics Corporation on the Air Force's new Atlas missile when he found himself preparing the huge rocket for another mission.

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NASA had begun the Mercury manned spaceflight program, and the Atlas would be used to lift the tiny, one-man capsules into orbit. Chuck served as a launch team member for that entire project. Joining NASA in 1964, Chuck served as the Spacecraft Test Conductor and as a deputy division chief during the following Gemini and Apollo programs. He continued to build experience in the launch business and is now the Director of Deployable Payloads Operations.

A part of that job involves serving as the Launch Director for all unmanned launches from the Cape. It is a job where experience and judgement seem to be the prime requisites. The energies required from the man are as great as those which thunder from the rockets. It is an exhausting and emotionally taxing position, and yet after a career of launches, Chuck is still excited about each one.

From his chair in the concrete walled blockhouse, Chuck sees the rocket only via small television screens on the console before him. Tied to a network of hundreds of technicians through his headsets, the excitement of a launch builds throughout the hours of a countdown and affects Chuck the same way each time. "I usually get goosebumps...anytime anyone counts backwards I get that feeling. I don't suppose you ever get over that," he says.

How does he feel about giving that final permission to launch? Chuck has mixed emotions. On the one hand, he feels relief. "You feel like it's pretty much behind you at that point...just one more stop light," he says.

On the other hand, "You have a lot of apprehension that all those things are happening out there and you wonder whether it's all going to click right on down and hang in there or is someone going to stub his toe."

That realistic apprehension reflects the fact that of the tens of thousands of parts in a rocket vehicle and satellite, none can go bad. Every single piece must work perfectly the first and only time it's used. What if the complex countdown checks find something out of order, an anomaly in the technicians' language? How much of a risk is Chuck willing to take in committing a rocket to launch?

Chuck says, "You have to satisfy yourself that an anomaly is either resolved or you are willing to accept it as a calculated risk that you're willing to fly with. But you like to go with everything perfect to make that mission."

After more than twenty years of doing just those calculations, the risk is very small indeed when Chuck Gay says "GO!"

# # #

# NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
305 867-2468

February 15, 1980

RELEASE NO: KSC 48-80

NOTICE TO EDITORS/NEWS DIRECTORS

SPACE SHUTTLE STATUS BRIEFING SCHEDULED FOR FEBRUARY 19

KENNEDY SPACE CENTER, Fla.--A news briefing on the status of Space Shuttle processing will be held in the fourth floor conference room of the Headquarters Building on Tuesday, February 19, 11 a.m.

Making the presentation will be John F. Yardley, Associate Administrator for Space Transportation Systems, of NASA Headquarters, Washington, D. C.

News media representatives who plan to attend this briefing should be at the News Center in Room 1207, KSC Headquarters Building, no later than 10:45 a.m.

Media representatives unable to attend the briefing in person may monitor it by calling the KSC Operator at 867-7110 and asking to be connected to the V-2 Circuit.

# # #

The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs. The Kennedy Space Shuttle is the primary launch and recovery site for the Space Shuttle, scheduled to begin manned test flights in 1980.

# # # #

NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
305 867-2468

April 11, 1980

RELEASE NO: KSC 67-80

Special: Delta Sky Magazine

NASA SPACEPORT PRESERVES UNIQUE NATURAL HERITAGE

An easy drive from the pleasure domes of Disney World, the Florida Gold Coast's marching ranks of high rise condominiums and Daytona's snarling race cars is a gentle but untamed land where time stands still.

Wild areas are becoming increasingly scarce along a Florida Atlantic coast being urbanized and industrialized at a frantic pace. But there's one large natural enclave which has survived destruction because of technology - not despite it.

This unique area is famed around the world as the site of NASA's John F. Kennedy Space Center, embarkation point for Project Apollo's epic manned voyages to the Moon and soon to be the principal launch and landing site for the revolutionary new Space Shuttle.

But the NASA reservation's other role as Merrit Island National Wildlife Refuge and major portion of the Canaveral

-more-

National Seashore is less well known. It is preserving a portion of Florida's unique natural heritage which may soon cease to exist outside of a few protected areas.

For nature still reigns outside of the relatively small operational areas of this huge NASA launch base which covers 140,000 acres of land and water - that's 220 square miles or about one-fifth the size of the State of Rhode Island.

At the heart of this natural paradise is Merritt Island, a verdant relic of the Florida past with broad sweeps of savanna, marsh and darkly wooded hammocks of palm and oak.

The island is separated from the Florida mainland on the west by the broad Indian River and from the pristine coastal strand to the east by the Banana River and Mosquito Lagoon. These richly productive bodies of water are brackish arms of the sea and are part of one of Florida's most extensive and untouched estuarine systems. They are vital nurseries for the Atlantic coast's commercial and sports fishing industries.

The 30-mile stretch of beach to the east of the island runs north from Cape Canaveral to just south of New Smyrna Beach and is almost un-American in its virgin character.

The restless Atlantic sends waves generated far out to sea dashing up high beaches crested with high bluffs held in place by Spanish bayonets, sea grape, century plants

and gracefully waving sea oats.

There are no empty beer cans or discarded pop bottles. There are no hot dog stands, towering condominiums or glittering tourist traps. Car and dune buggy traffic is banned from the clean, white beach and the sounds are those of the wind, waves and shrieking sea gulls - not honking horns or racing engines.

Finding refuge and making their homes in these lands and waters are 12 endangered or threatened species - more than may be found in any other single location in the lower 48 states.

It is NASA's charter to explore space and not - per se - to acquire and manage wildlife refuges or seashores. How did the space agency's acquisition of its huge reservation on the central Florida east coast come about?

"Federal ownership of this unique area is a direct legacy of Project Apollo," commented KSC Director Richard G. Smith. "NASA bought nearly 84,000 acres of land from its private owners and acquired jurisdiction over an additional 55,800 acres of water and submerged lands from the State of Florida during the early 1960's.

"NASA needed this vast expanse as a buffer zone for the huge Saturn V rocket required to hurl men to the Moon and also as a growth area for the large space vehicles

which might follow. With the successful landings on the Moon and the end of Apollo and adjunct programs, we are looking toward the advent of the reusable Space Shuttle and the prospect of KSC being an operational spaceport into the next century - and beyond.

"From the very beginning," added Smith, "NASA has recognized the unique and delicate nature of the lands and waters within the center and treated them with the greatest care consistent with meeting our operational requirements.

"We are protecting this precious national legacy in our construction projects and in our space operations. All areas not in operational use are managed for us by the U. S. Department of the Interior as a wildlife refuge and as a national seashore. We protect not only the wildlife but the many and varied habitats it needs to survive. We have demonstrated that high technology, natural landscapes and wildlife can co-exist successfully. And because this unique area belongs to all of us, we try to keep as much of it open to the public as operational requirements permit."

Approximately 10,000 acres - or only about 7 percent - of the 140,000 acres under NASA control are actually used for launch complexes, industrial areas, shuttle landing and base support facilities and roadways. Of the remaining acreage, 90,000 acres are managed by the U. S. Fish and Wildlife Service

as the Merritt Island National Wildlife Refuge and about 41,000 acres fall within the boundaries of the Canaveral National Seashore under the jurisdiciton of the National Park Service.

The Merritt Island Refuge is easily the most heavily visited of the 400 wildlife refuges in the federal system and offers a wide variety of attractions to the wildlife and wildlands fancier.

An estimated 1.7 million people visited the Refuge during 1979, including the 1.2 million taking guided tours of KSC facilities. It's legitimate to include NASA's tour bus patrons in the Refuge visitation total as visitors are able to view many different species of wildlife from their buses along the 33-mile, two-hour tour route.

"What makes it so attractive is the wide diversity of wildlife," said Dorn Whitmore, Outdoor Recreation Planner for the Refuge. "More than 280 species of birds have been observed here and it's usually among the top ten areas in the number of species sighted during the National Audubon Society's annual Christmas bird count.

"We have populations of 12 endangered species here," observed Whitmore. Strictly protected here are the southern bald eagle, brown pelican, dusky seaside sparrow, Arctic peregrine falcon, the West Indian manatee or sea cow, the

American alligator, Atlantic salt marsh snake, Eastern indigo snake and four species of large sea turtles - Kemp's Ridley, Atlantic green, hawksbill and loggerhead.

A special treat for visitors is a glimpse of a magnificent bald eagle with its distinctive white head soaring through the skies on wings with a span wider than most basketball players are tall. The eagle winters here and as many as five breeding pairs have successfully nested and raised young in typical recent years.

Brown pelicans give the impression of being awkward buffoons on the ground or perched on pilings. But they are pictures of graceful flight as they soar in precise formation over the dunes or ride a cushion of air inches above the rolling waves along the shore. The brown pelican population here is large and healthy and from 200 to 800 pairs nest annually on a mangrove island rookery in Mosquito Lagoon. Birds from the local colony have been taken to Louisiana to help restore a population stricken by pesticide residues.

The American alligator population continues to grow under protection and now numbers more than 5,000 reptiles, some of them more the 12 feet long.

Florida has a manatee population estimated at 1,000 and perhaps 20 percent of them makes their homes in waters around or adjacent to the Refuge and Seashore. To protect these

amiable one-ton giants, strictly-enforced "slow speed" zones have been established for power boats in the waters they favor most. In addition, the boats being built to recover the solid rocket boosters from Space Shuttle launches and tow them up the Banana River to a processing facility will have propulsion systems especially designed to prevent the propeller injuries which have killed and maimed so many manatees.

Human intervention is helping the beleaguered giant sea turtles (some weighing up to 500 pounds) rebuild their numbers in several ways. The females swim ashore at night and crawl up to the dunes to lay their eggs during the summer months but the decline of predators and resulting explosion of a raccoon population which considers turtle eggs quite tasty was resulting in almost 100 percent mortality.

The nest-raiding raccoons are being trapped on the beach and moved to inland areas where they won't interfere with the giant turtles' nesting process. Egg mortality has been reduced to 20 to 25 percent, a loss Refuge officials feel they can live with.

Human help is offered the sea turtles in other ways. A cold wave swept into Florida in January, 1977, and plunged temperatures into the low 20s. More than 140 cold-stunned green, loggerhead and Kemp's Ridley turtles surfaced on the

shallow waters surrounding KSC or were beached on their shores. The reptiles, almost anesthisized by cold water temperatures more than 10 degrees below the 50 degrees which they can tolerate, were rescued and moved into a laboratory on the Refuge for protection until after the cold wave passed.

Wildlife harvesting as well as protection is practiced here and the Refuge offers probably the best waterfowl hunting in Florida. Wintering duck populations have gone as high as 80,000 birds of 23 different species. About 40,000 acres are open to hunting and 3,600 hunters made a bag of 15,000 ducks during the 1979-80 season. Included in the harvest were pintails, widgeons, ringnecks, blue and green wing teal, redheads, canvassbacks, mottled ducks and scaup.

Other attractions on the Refuge include two wildlife drives, each offering leisurely five-mile tours of wildlands heavily populated with birds and other wild inhabitants, and a hiking trail.

The Refuge is also unique in its inclusion of about 2,500 acres of prime citrus groves which are leased to private operators and return nearly $316,000 to the federal treasury annually.

The Refuge is open to the public during daylight hours and the emphasis is on wildlife. The Canaveral National Seashore is more people-oriented but is destined to remain

basically in its natural state.

Created in 1975, the Canaveral Seashore is the nation's newest but already attracts impressive numbers of visitors. In 1979, Canaveral pulled in 860,000 sea, sun and surf-lovers and fishermen to savor its natural delights. This attendance compares with the 1.7 million at Cape Hatteras and the 2.9 million at Gulf Islands, other southeastern seashores which have been longer established and are better known.

"The beach is our basic attraction," said Carol Kruse, Canaveral Seashore naturalist. "And its undeveloped state is a major lure."

Approximately two thirds of Canaveral's visitors enter the seashore via Florida Route 402 which ends at Playalinda Beach, 12 miles due east of Titusville. The Space Shuttle launch pads at Complex 39 are easily visible from this southern entrance to the seashore where a road wends north behind the high dunes for a distance of five miles before ending at Camera Pad 10.

The remaining third enter the park at the Apollo ranger station on Florida A1A 10 miles south of New Smyrna Beach. An unpaved road runs to the south for a distance of five miles before coming to an abrupt end at the site of an old Coast Guard station.

In between the north and south access roads is a pristine

15 mile long strip of beach which can't have changed much since the Spaniards first sailed past in the early 16th century. Automobile or dune buggy traffic is prohibited on the beach and visitors who wish to sample the delights of this wild area must pull their bodies out of their vehicles and hoof it.

For those with a love of nature, the vistas from the high dunes are breath-taking.

"All that undeveloped beach is our prime reason for being," said Kruse.

The Canaveral National Seashore embraces a total land and water area of 57,600 areas. The 41,000 acres of NASA-owned land is in the south. The remaining acreage is in the north end of the seashore and was obtained by absorbing Florida's Apollo State Park and buying privately-owned lands.

A comprehensive development plan for the new seashore is in the works but indications are that it will remain basically in its wild state.

The fishing in the Atlantic surf to the east and in the brackish waters of Mosquito Lagoon to the west is superb. Worthy quarry for the angler are spotted weakfish or sea trout, drum, redfish or channel bass, pompano, bluefish, whiting, snook and the ubiquitous mullet, the latter a vegetarian which must be caught in a net.

Among the other attractions is Turtle Mound, an Indian midden or shell mound near the northern entrance to the seashore. Turtle Mound, a small mountain of oyster shells heaped up by the ancient Indian inhabitants of the region over a 600-year period from 800 to 1400 AD, rears up 35 feet above the surrounding terrain to provide a magnificent view of Mosquito Lagoon and its unspoiled mangrove islands.

Like the Refuge, the Seashore is open to the public from sunrise to sunset. Boat ramps are located on both the Refuge and Seashore to accommodate those who wish to launch small craft to ply the waters of the Indian River and Mosquito Lagoon.

Details on visiting these public areas of the nation's spaceport may be obtained by writing or calling: Refuge Manager, Merritt Island National Wildlife Refuge, P.O. Box 6504, Titusville, FL. 32780 (Area Code 305-867-4820). Superintendent, Canaveral National Seashore, P.O. Box 2583, Titusville, FL. 32780 (Area Code 305-867-4675).

It's ironic but true that one of the most beautiful and tranquil places on Earth owes its preservation to a high technology program designed to carry humanity to another world.

# # # # #

NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

IF.5 #17

Dick Young
305 867-2468

For Release:

April 11, 1980

RELEASE NO: KSC 69-80

NOTICE TO EDITORS/NEWS DIRECTORS

ELECTRIC VAN DEMONSTRATION SCHEDULED FOR FRIDAY, APRIL 11

KENNEDY SPACE CENTER, Fla. - A demonstration of the electric mini-vans soon to begin testing at the General Services Administration Motor Pool at KSC will be held Friday, April 11, at 10 a.m.

The KSC test project is part of an Electric/Hybrid Vehicle Program being conducted under the auspices of the U. S. Department of Energy to reduce the importation of petroleum. The program calls for testing some 10,000 electric-powered vehicles in private, state and local government and federal government fleets between Fiscal Years 1978 and 1986.

News media representatives who wish to attend the mini-van demonstration should be at the KSC News Center in the Headquarters Building no later than 9:45 a.m. on April 11. Those without permanent press credentials should call in advance to arrange clearance.

Personnel from KSC, GSA and the vehicles' manufacturer - Jet Industries, Austin, Texas - will be on hand to demonstrate their operation and respond to questions concerning the test program.

Additional information on the mini-vans and test program is contained in the news release accompanying this notice to editors and news directors.

# # # #

NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Rusty Dorr
305-867-2468

April 17, 1980

RELEASE NO: KSC 73-80

NASA TO DISCONTINUE SOME PHILATELIC SERVICES

KENNEDY SPACE CENTER, Fla.--NASA will discontinue its practice of cacheting launch covers for the Western Test Range in California, effective immediately.

Due to the closing of NASA's Western Operations Office, covers will no longer be accepted by the WTR office, nor will envelopes be cacheted. Any covers or envelopes received after April 15 will be returned to senders, while those already received will be serviced under the auspices of the KSC Philatelic Society. These will be serviced at either Vandenberg Air Force Base or the Lompoc, Calif., post office.

Philatelic servicing for Kennedy Space Center's east coast operations will continue under the following guidelines:

1. Specify the event for which you wish this service. There is a limit of 10 covers per customer per event.

2. All covers must be self-addressed and bear at least first class postage placed 3/4" down from the right top of cover. Envelopes should contain a filler not to exceed the thickness of a postal/computer card to assure a clear cancellation.

3. Requests for personally autographed covers, or for carrying covers onboard during flight cannot be complied with.

4. All inquiries must be accompanied by a stamped self-addressed envelope.

5. Requests for service must be received at least five days prior to an event, but no earlier than thirty days.

6. Send your requests to: Chief, Mail & Distribution Services,
AD-CSO-M
Kennedy Space Center, FL 32899

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7. There are no plans to provide cachet service (rubber stamp).

8. Hand-back service by the KSC Post Office will not be provided.

# # #

NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Rocky Raab
305 867-2468

April 17, 1980

RELEASE NO: KSC 75-80

HUNDREDS OF LAUNCHES SCHEDULED AT KSC THIS WEEKEND

KENNEDY SPACE CENTER, Fla.--More than 400 rocket launches will take place from here the weekend of April 19-20, including a number of launches of the famed Saturn V rocket. But the launches are not destined to place spacecraft in orbits around the Earth or the Moon; they will be launches of model rockets in the fourth annual Apollo Eleven Commemorative Meet.

AECM IV, as it is called, is a model rocket contest honoring man's first landing on the moon. It is sponsored by Orlando's Orange Rocketeers and is the only model rocket contest held at KSC. The first AECM was held in July, 1976, to coincide with the 3rd Century America Bicentennial Exposition.

The model rocket launches will be conducted in a large grassy area south of the KSC Headquarters Building parking lot. The event is not open to the public but bus tours originating from KSC's Visitors Center will be routed past the area on Saturday and Sunday to permit tour patrons to view the action.

NASA's John F. Kennedy Space Center and the Orange Rocketeers serve as co-sponsors of the event, which is held under the auspices of the National Association of Rocketry. All model rockets are powered by tiny solid propellant motors and must conform to NAR safety regulations.

Nearly a dozen different flight and scale events will be judged during the competition. One of the more challenging events is the egg loft, in which contestants launch an egg-carrying rocket to the highest possible altitude, and attempt to return the egg to earth undamaged. This event simulates the launching of a delicate or live payloads into space.

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Other events include the predicted altitude contest where competitors must foretell how high their rocket will climb; the predicted duration, where the total time of flight and parachute descent must be pre-guessed; dinosaur superroc, where models more than five feet tall are boosted to the highest altitude, and other sport and scale events.

One popular scale event is the launching of scale models of the huge Saturn V moon rocket.

Other elements of the contest include a dinner for the young contestants, an awards presentation to the winners, and a special presentation by a representative of NASA after the dinner. This year's speaker will be Steve Dutczak, who will discuss spinoffs of space technology to the solution of Earth problems.

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NASA News IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Dick Young
305 867-2468

May 23, 1980

RELEASE NO: KSC 92-80

SPACE TRANSPORTATION SYSTEM USERS CONFERENCE SET FOR LATE MAY

KENNEDY SPACE CENTER, Fla.--As many as 100 executives and managers of domestic, foreign, and international organizations involved in missions aboard the Space Shuttle will be attending a Space Transportation System Users Conference to be held here May 29-30.

The conference is being held under the auspices of NASA Headquarters and the principal participants include Dr. Glynn S. Lunney, Acting Associate Administrator for Space Transportation Operations; Chester M. Lee, Director, Space Transportation System Utilization; Neil Hosenball, NASA General Counsel; Dr. Myron Malkin, Deputy Associate Administrator, Office of Space Transportation Systems; Joe Mahon, Director, Expendable Launch Vehicles Program; John Neilon, Manager, Cargo Projects Office at KSC, and, Dr. Robert Gray, Manager, Shuttle Projects Office at KSC.

Said Dr. Lunney in announcing the Conference: "As we move forward toward the final preparations for the Space Shuttle's first orbital flight, I believe it would be most appropriate for the senior executives of users of the Space Transportation System and their principal contractors to again meet and discuss the present status of STS planning."

The prestigious list of invitees includes representatives of major American aerospace and technical organizations and agencies of the United States government, the European Space Agency, U. S. business firms, international corporations, foreign business firms and government agencies from around the world.

The agenda includes discussions of the status and schedule of the Space Shuttle and other Space Transportation System components, expendable launch vehicle status and schedule, the first Space Shuttle flight, and schedule for subsequent missions, flight manifests and a briefing on insurance arrangements.

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The conference will include a tour of the Kennedy Space Center's processing and launch facilities.

All sessions will be held in KSC's Training Auditorium.

Heavy demand for STS services from a wide range of users, as indicated by the attendance list for the user's conference, is also reflected in the payload and mission assignments for the early years of operations. Six U. S. corporations, several foreign governments, and eight foreign/international corporations have deposited with NASA, either progress payments toward a specific launch date, or earnest money payments, to acquire a launch slot, while several other organizations are preparing to come aboard shortly.

In addition, NASA and one of the first users of the STS, the Intelsat Corp., have recently concluded negotiations and signed a launch services agreement. Several other contracts are in the final stages of negotiations and are nearly complete. NASA is very pleased with this level of demand and user interest in its services during the early years of operations and expects that utilization of the STS will intensify as the economic benefits and added performance capabilities of the STS become a reality.

NOTE FOR THE PRESS:

STS Users Conference sessions will not be open to the press but arrangements have been made for a news conference with NASA Headquarters and KSC participants at 11 a.m. on Friday, May 30. The news conference will be held in Room 2004 of the Operations and Checkout Building. Representatives of the news media who plan to attend should be in the KSC News Center, Room 1207, KSC Headquarters Building, no later than 10:30 a.m. on that date. You can assist our planning for this conference by calling 867-2468 and let us know in advance if you plan to attend.

# # #

NASA News IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Rusty Dorr
305 867-2468

May 29, 1980

RELEASE NO: KSC 95-80

NASA PROVIDES SANCTUARY FOR BELEAGUERED MANATEE

KENNEDY SPACE CENTER, Fla.--The state of Florida has become the last refuge for the manatee, an endangered species with numbers decreasing at an alarming rate. Brevard County, in which the Kennedy Space Center is mainly located, has the highest incidence of manatee deaths in the state.

This alarming statistic has caused NASA to focus its attention on this native Floridian and to take steps to ensure its survival in the brackish rivers and lagoons surrounding the nation's Spaceport.

KSC is also the home of the Merritt Island National Wildlife Refuge, which is inhabited by hundreds of species of coastal plants and boasts a wide variety of birds, animals and reptiles. Twelve species of birds, mammals and reptiles here are on the endangered or threatened lists, more than in any other single location in the lower 48 states. All center activities are coordinated so that interference with the indigenous wildlife is kept to a minimum.

The manatee, or sea cow, is a large ponderous animal shaped like a fat cigar with two small, front flippers and a broad, spatula-shaped tail. Strictly vegetarian, these gentle creatures consume up to 100 pounds of food per day and may grow to over 12 feet in length and weigh over 1,000 pounds.

At one point, manatees flourished throughout the coastal states of the southeastern U. S., but were hunted extensively for their meat, blubber and ivory-like bones. Their numbers dwindled to the point where the entire U. S. population, estimated at about 1,000, now lives in Florida waters. Manatees have been protected by state law since 1893 and the Marine Mammal Act of 1972 bans hunting them in U. S. waters.

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The manatee has no natural enemy today, except for human carelessness or vandalism. Man accounts for about half of all manatee deaths. Herbicides and spreading shoreline development are gradually destroying their feeding and breeding grounds. The greatest culprit, however, is the power boat's lethal propellor blade. Boating accidents caused one-third of all manatee deaths last year.

The manatee is a mammal and must surface every few minutes to breathe. The slow-moving animal usually raises its snout just above water, making it an extremely vulnerable and well-hidden target for fast-moving motorboats. Most adult manatees bear the scars of a close encounter with their destructive neighbors.

The Merritt Island Wildlife Refuge reports that about 20 per cent of the nation's manatees spend at least a part of the year on the Space Center. NASA has recognized its responsibilities toward these vulnerable animals and is working to ensure a peaceful, productive co-existence.

David Dunsmoor, an environmental engineer at KSC, reports that several projects have been undertaken by NASA to study the manatee. Space technology was used to develop tracking devices which permitted wildlife workers to monitor the routes travelled by individual manatees. NASA funded aerial surveys in and around KSC to learn more about populations and group migratory habits. These studies have provided valuable insight concerning warm and cold weather feeding grounds, permitting Spaceport engineers to schedule work in specific areas when the manatees will be absent.

Anyone who operates a boat under U. S. Government control in KSC waters must take a manatee-training class, taught by the U. S. Fish and Wildlife Service. This course has also been taught to area Coast Guard members, who will hold classes for the general public.

Even the Space Shuttle program has had to make some allowances for manatees, although in this case the changes are going to benefit both parties. NASA will be using ships which have the function of recovering the spent solid rocket boosters after they are jettisoned from the Space Shuttle and land some 150 miles off the Florida east coast. These large, trawler-like vessels will be docked in one of the manatees' favorite feeding grounds in the Banana River.

The ships will be outfitted with a jet propulsion unit which can maneuver the ship in any direction at a low speed without the use of the ship's large propellors. Not only will these propulsion units be safer for the manatees, but they will be useful in retrieving the SRB's at sea. By switching to jet propulsion, the possibility of parachute lines being entangled

in spinning propellors will be eliminated during the SRB recovery procedure.

Besides these specific projects designed for use at KSC, NASA environmentalists also serve on various committees and working groups, such as the Florida State Endangered and Threatened Species Advisory Council. Space-age technology plus an old-fashioned concern for other living creatures are creating an environment where the manatee and the nation's space program can live together to the benefit of both.

# # #

NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

IF.5 #17

Dick Young
305 867-2468

Dave Garrett
202 755-3090

For Release:
June 10, 1980

RELEASE NO: KSC 101-80

ALABAMA FIRM TO CONDUCT SHUTTLE BOOSTER RETRIEVAL OPERATIONS

KENNEDY SPACE CENTER, Fla. - NASA has awarded a contract to establish and operate a two-ship recovery force to retrieve expended Space Shuttle solid rocket boosters from the Atlantic Ocean. The contract, managed by the John F. Kennedy Space Center, went to United Space Boosters Inc., Huntsville, Ala.

USBI is a subsidiary of United Technologies Corporation's Chemical Systems Division, Sunnyvale, Calif.

The $7,230,976 agreement formalizes a letter contract signed July 13, 1979, and covers the period through February 28, 1982. Options for the two specially constructed recovery vessels to be operated by USBI under the contract extend for a 14-year period through February 28, 1995.

The agreement is a supplement to a contract under which USBI assembles and processes solid rocket boosters for flight, bringing the total current value of the parent contract to $17,718,000.

Under the contract, USBI is to provide the capability to deploy a retrieval force to locate and retrieve expended solid rocket booster casings, parachutes and other flight elements from the Atlantic Ocean and deliver them to the Solid Rocket Booster Disassembly Facility located at Cape Canaveral Air Force Station.

The new vessels, designated the UTC Liberty and UTC Freedom, were designed for United Technologies Corporation/USBI by Rudolph F. Matzer and Associates, Jacksonville, Fla., and are under construction by Atlantic Marine, Inc., Fort George Island, Fla. The vessels are to be delivered to KSC in October, 1980, and January, 1981.

-more-

Both ships will be used on each shuttle mission; each can retrieve one booster and associated components.

The vessels are 53.6 meters (176 feet) long, have beams of 11.3 meters (37 feet), a depth of 4.6 meters (15 feet) and draw 2.7 meters (nine feet) of water. Of molded steel hull construction, the recovery vessels will feature sophisticated electronic communications and navigation equipment, including a satellite navigation system, search radars, collision avoidance sonars with transponders, radars, Loran C, VHF and single-sideband high frequency radio systems, direction finders, fathometers and gyro compasses. Each vessel is to have a displacement of 955 metric tons (1,052 tons).

At sea, propulsion will be provided by twin diesel engines with a combined power output of 2,900 horsepower. Maneuvering ability will be provided by a diesel-driven 425 horsepower bow thruster.

The Hangar AF disassembly facility is located on the eastern shore of the Banana River, a shallow arm of the sea where many manatees or sea cows, an endangered species, make their homes. Propulsion in the Banana River will be provided by a 425-horsepower waterjet stern thruster, eliminating the danger from propellers which can maim or kill the manatees.

The vessels will have a sustained speed capability of 24 kilometers per hour (13 knots), a range of 11,100 kilometers (6,900 statute miles), and a complement of 24 - 12 crew and 12 retrieval specialists.

During a launch, two 45.4 meter (149-foot) tall solid rocket boosters will burn simultaneously with the Space Shuttle orbiter's three main engines at liftoff. The solid rocket boosters will burn for about two minutes before they are jettisoned at an altitude of approximately 45 kilometers (28 miles).

The expended booster casings will impact in the Atlantic Ocean approximately 257 kilometers (160 miles) downrange from the Kennedy Space Center's Launch Complex 39, their final descent into the water slowed by three 35 meter (115-foot) diameter parachutes on each booster.

The retrieval ships will carry the necessary equipment to plug the nozzle cavities, pump out water in the casings and bring them into horizontal position for the long tow back to the Hangar AF Disassembly Facility. Four parachute rollers on each vessel will be used to retrieve the three main and single drogue parachutes on each booster and the vessels are equipped with cranes to hoist collateral flight equipment aboard.

After return to the Disassembly Facility, the casings are cleaned and disassembled for shipment to Utah where they will be reloaded with solid rocket propellant.

Each casing can be reused for up to 20 missions, substantially reducing the cost of flight operations in the Space Shuttle era.

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# NASA News

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National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

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Mark Hess
305 867-2468

For Release:

June 10, 1980

RELEASE NO: KSC 112-80

## SPACEPORT AWARDS COMPUTER SCIENCES CORPORATION ONE-YEAR EXTENSION

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded Computer Sciences Corporation's Applied Technology Division, Falls Church, Va., a $36,782,578 one-year extension on its communications and instrumentation support services contract.

The cost-plus-award-fee contract calls for CSC to provide communications and instrumentation services in support of the Space Shuttle program including development, flight test and operational phases, as well as for expendable launch vehicle programs utilizing Delta and Atlas Centaur rockets, and various earth resources investigative programs. Data acquisition and data processing for KSC's manned and unmanned launches and administrative programs, instrumentation of the Launch Control Center firing rooms and the operation of timing systems are among the support services provided under the contract.

The extension is for a one-year period beginning June 1, 1980. This action marks the fourth year of service and brings the total value of the contract to $106,851,713.

Computer Sciences Corporation and its subcontractor, the RCA Services Company, Cherry Hill, N.J. will provide support in the areas of communications, measurements, telemetrics and administrative computer services, data storage and retrieval, program planning, and reliability and quality assurance programs.

The Kennedy Space Center is the prime launch and recovery site of the reusable Space Shuttle, the key element of a new space transportation system that will open the door to the economical and routine use of space for commercial, scientific and defense needs. Currently, the Spaceport launches a wide variety of unmanned weather, communications and scientific satellites and spacecraft aboard expendable rockets from facilities at adjacent Cape Canaveral Air Force Station.

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NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release:

Mark Hess
305 867-2468

June 13, 1980

RELEASE NO: KSC 113-80

PRIME CREW TO PARTICIPATE IN EXTERNAL TANK SEPARATION TEST

KENNEDY SPACE CENTER, Fla.--Prime crew astronauts, Commander John Young and Pilot Robert Crippen, will participate in a test, June 14, of the system which will separate the external tank from the Space Shuttle Orbiter Columbia.

For the test, called the "pyro shock test," pyrotechnic devices on the single forward attach point and the two aft attach points which connect the orbiter to the external tank will be triggered.

The shock test will:

. Verify that thermal protection system tiles in the vicinity of the attach points are not damaged by this flight function.

. Verify that no structural damage is sustained.

. Checkout the electronic circuits controlling the firing event.

Of particular concern are how 34 tiles in the vicinity of the forward attach point and 44 tiles around each of the two aft attach points react to triggering the frangible bolt and nuts.

The test is scheduled for late Saturday evening and will be conducted in the Orbiter Processing Facility where Columbia is being readied for its first flight. Young and Crippen will be in the crew cabin. Pilot Crippen is to trigger the "separation" by pressing a panel and holding it down for three seconds. Separated at the forward attach point will be a bolt about four inches in diameter. The frangible nuts on the two aft attach points have an inside diameter of nine inches and an outside diameter of 12 inches.

-more-

Astronauts Joe Engle and Karol Bobko will observe the test from Columbia's aft and main deck watching for avionics reactions to the firing.

After liftoff on a normal Space Shuttle mission, the orbiter's three main engines fire for about 10 minutes, fed by propellants stored in the 500,000 gallon capacity external tank. After the super-cold liquid hydrogen and liquid oxygen propellants have been used up, pyrotechnic devices at the attach points are fired, releasing the 154-foot long tank. The tank breaks up reentering the atmosphere and is not recovered.

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# NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

For Release
June 27, 1980

Mark Hess
305 867-2468

RELEASE NO: KSC 117-80

FT. LAUDERDALE FIRM WINS $8.6 MILLION CONTRACT EXTENSION

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded an $8,645,000 contract extension for minicomputers and associated equipment for the Space Shuttle's Launch Processing System to Modular Computer Systems, Inc., of Ft. Lauderdale, Florida.

The Launch Processing System will control and perform much of the Space Shuttle vehicle checkout automatically while the vehicle components are being prepared for launch. It will also provide the capability for work order control and scheduling, and conduct countdown and launch operations.

The equipment and related services called for under this contract are for the Launch Processing System here, and for use with the Department of Defense's payload checkout system at KSC and its Space Shuttle launch facilities being built at Vandenberg Air Force Base, California.

The fixed price indefinite quantity contract extends from January 1, 1980 through December 31, 1981. This action brings the total value of the contract to $27,136,638.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, the key element of a new space transportation system that will open the door to the economical and routine use of space for commercial, scientific and defense needs.

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NASA News

National Aeronautics and
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**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

IF.5 #17

For Release:
July 1, 1980

Hugh Harris
305 867-2468

RELEASE NO: KSC 119-80

LOCAL HEALTH AND SOCIAL AGENCIES TO RECEIVE CONTRIBUTION FROM FEDERAL EMPLOYEES

KENNEDY SPACE CENTER, Fla.--Local social service and health agencies, which are not affiliated with United Way, may benefit from the generosity of Federal workers this year during their annual fall charity drive called the Combined Federal Campaign, or CFC.

Federal employees in Brevard County contributed $204,000 last year to United Way, National Health agencies and International Service agencies.

This year a number of rule changes have taken effect which will allow more charitable groups to have access to the CFC, as well as change the formula for distribution of the funds collected.

William F. Huseonica, Brevard County Chairman of the CFC, and Chief of the Projects Control Office at the Kennedy Space Center, says, "Local groups must have their application and information in to be evaluated by the local CFC committee by July 11 in order to be eligible for designated funds during the fall campaign." Applications can be mailed to Huseonica at Mail Code CP-PCO, Kennedy Space Center, Florida 32899.

The criteria according to Huseonica require the local agency to be a non-profit, tax exempt charitable organization supported by direct contributions from the general public. The agency must be providing a bona-fide program of health or welfare services in the area covered by the local CFC. In addition, the agency must operate without discrimination and comply with accepted independent audit procedures.

-more-

In the past, the contributions of Federal employees across the country have been divided between three major groups; the United Way, the National Health Agencies, such as Red Cross; and International Service Agencies, such as CARE and Project HOPE. Last year, nationwide, Federal employees contributed $82 million to these groups.

This year the campaign which is operated under regulations by the Office of Personnel Management in Washington, D. C., not only will allow more charitable groups to have access to CFC, but also change the formula for distribution, strengthen prohibitions against coercion and provide for greater employee participation in local CFC administration.

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NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

IF.5 #17

For Release:
July 1, 1980

Leslie Vock
305 867-2468

RELEASE NO: KSC 120-80

INDIANA FIRM WINS NASA COMMUNICATIONS CONTRACT

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded a $31,335 contract to Magnovox Government and Industrial Electronics Co., Fort Wayne, Indiana, for Space Shuttle-related communications equipment.

This equipment will be used at alternate Space Shuttle landing sites at the White Sands Test Facility, New Mexico, and Dryden Flight Research Center, Edwards, California. It consists of five vehicular adapters and two mobile radios that will provide ground-to-air and ground-to-tower radio communication capability for the orbiter convoy command vehicle.

The lead vehicle is the command center that directs operations, controls emergency response forces, ground support equipment and astronaut exit system equipment at the landing sites. The lead vehicle is a critical link in the command communications control system and will contain a senior landing site representative from NASA, the Department of Defense and Rockwell International.

The adapters and mobile radio will be used to communicate with helicopters standing by the landing sites. The adapter allows the ground-to-air and ground-to-tower mobile radio, originally intended for use in an aircraft, to be mounted in a vehicle.

Both items in the fixed price contract are to be completed by September 30, 1980.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, the key element of a new space transportation system that will open the door to the economical and routine use of space for commercial, scientific and defense needs.

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NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

F.5 #17

Mark Hess
305 867-2468

For Release:

July 7, 1980

RELEASE NO: KSC 124-80

SEA EXERCISES PLANNED TO TEST SRB RETRIEVAL EQUIPMENT

KENNEDY SPACE CENTER, Fla.--Extensive week-long sea tests of equipment that will be used to retrieve Space Shuttle solid rocket booster casings from the Atlantic Ocean are planned beginning July 14, 1980.

For the tests, the recovery vessel Bering Seal will tow an 80-ton simulated solid rocket booster casing, called the Ocean Test Fixture, out to sea, about 65 miles southeast of Port Canaveral. Once in place, retrieval specialists will practice recovery operations with the fixture using the nozzle plug.

Essentially a long motorized cylinderical metal cork, the nozzle plug is inserted into the aft end of the fixture, pumps out the water allowing the vertically bobbing casing to rotate to a horizontal position so it can be towed back to land.

The operation will be conducted from the recovery ship Bering Seal. The ocean operating area is a 20-mile wide by 45-mile long rectangle, about the area from Vero Beach to Cocoa Beach. The operation will begin each day at the south edge of the rectangle in water over 200 feet deep.

Onboard the Bering Seal will be a retrieval team made up of both NASA and United Space Booster, Inc. personnel. USBI will operate the two-ship recovery force, under a NASA contract, that will recover expended solid rocket boosters from the ocean during actual Shuttle operations.

The primary objectives of these tests are to prove the nozzle plug will do the job dewatering and sealing spent solid rocket boosters, and for training the crew in recovery procedures.

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Recovery operations during the tests will follow the same procedures that will be used for retrieving actual solid rocket boosters.

Once the ocean test fixture is in position, bobbing vertically in the ocean with only a portion of the 130-foot long fixture above water, the nozzle plug will be lowered into the water by a crane located onboard the ship.

Operated remotely through an umbilical cord connecting the plug with pneumatic and control equipment on the ship, the plug swims to a position near the fixture and dives down alongside it. A television camera at the top of the plug inspects the casing for damage.

The plug is then inserted into the tail section of the fixture, secures itself in position with three locking arms, and pumps air into the water-filled cavity.

This raises the fixture partially out of the water, causing it to tip from the vertical to the horizontal position, necessary for towing it back to land.

Several additional recovery devices will also be tested during the operation. These will include two smaller dewatering devices which can be used as a contingency to the nozzle plug.

At liftoff, the Space Shuttle's twin solid rocket boosters burn simultaneously with the orbiter's three main engines. After two minutes of flight, the expended solid rocket boosters are jettisoned and parachute into the Atlantic Ocean about 150 miles down range from its Kennedy Space Center launch site.

Two retrieval ships, each carrying a nozzle plug and associated recovery equipment, will be stationed in the ocean near the landing area.

Each ship will recover a booster casing, and the parachute and the frustum-drogue chute combination used in returning them to the earth's surface.

Only the simulated recovery of the solid booster casings with the nozzle plug will be performed during this operation. At-sea tests have already been conducted to rehearse retrieving the frustum and parachutes. A full-scale recovery test, using the Ocean Test Fixture, a mockup frustum, parachutes and all the associated solid rocket booster recovery equipment, is scheduled for later this year.

# # #

NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

IF.5 #17

Hugh Harris
305 867-2468

For Release:

July 11, 1980

RELEASE NO: KSC 126-80

ANNIVERSARY OF APOLLO 11 LAUNCH TO BE OBSERVED JULY 16

KENNEDY SPACE CENTER, Fla.--It will be 11 years ago this Wednesday that Apollo 11 astronauts Neil Armstrong, Michael Collins and Edwin "Buzz" Aldrin embarked on the first journey to the surface of the Moon.

The Kennedy Space Center will observe the major role it played in that historic first lunar landing mission during several ceremonies scheduled for Wednesday, July 16, the anniversary of the Apollo 11 launch date.

Members of the Apollo 11 Commemorative Association will host a breakfast beginning at 8:15 .m. Wednesday in Theater 1 of the Visitors Center.

Scheduled to speak are KSC Director Richard Smith, who will reflect on the Apollo 11 flight and provide an update on the Space Shuttle program; Col. John S. Burklund, commander of the Eastern Space and Missile Center, and William O. Jewell of the Spacelab Operations Branch.

A film of the Apollo 11 liftoff will be shown as a finale to the breakfast ceremony.

Following the film, buses will transport people from the Visitors Center to the Vehicle Assembly Building, where at 10 a.m. the American Society of Mechanical Engineers (ASME) will dedicate the Saturn V on display south of the building as a National Historic Mechanical Engineering Landmark.

It was atop a Saturn V that astronauts Armstrong, Collins and Aldrin began their journey to the Moon.

Dr. C. E. Jones, president of the ASME, will present NASA with a bronze plaque. Identical plaques will be dedicated at the Alabama Air and Space Museum in Huntsville, Ala., and Johnson Space Center in Houston, Texas.

(more)

The National Historic Mechanical Engineering Landmark Program, started by the ASME in 1973, is intended to promote a general awareness of the nation's technological heritage among both engineers and the general public.

The Saturn V joins the crawler-transporters of Launch Complex 39, which were dedicated as historic landmarks by ASME in 1977.

The crawler-transporters were used to move the assembled Saturn V Apollo space vehicles from the VAB to the launch pad.

In another ceremony Wednesday, the National Society of the Daughters of the American Revolution, Palm Beach Chapter, will present KSC with a plaque for "outstanding achievement to mankind and to commemorate the launch site of man's first flight to the Moon." The plaque will be permanently displayed outside the Visitors Center.

The dedication ceremony is scheduled for 1 p.m. on the north side of the Visitors Center. A tour of Space Shuttle facilities will follow the presentation.

More than 100 national and state DAR officers are expected to attend.

# # #

NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Dick Young
305 867-2468

For Release:
July 15, 1980

RELEASE NO: KSC 123-80

Special Feature:

UNIQUE NATURAL HERITAGE PRESERVED BY NASA SPACEPORT

KENNEDY SPACE CENTER, Fla.--An easy drive from the pleasure domes of Disney World, the Florida Gold Coast's marching ranks of high rise condominiums and Daytona's snarling race cars is a gentle but untamed land where time stands still.

Wild areas are becoming increasingly scarce along a Florida Atlantic coast being urbanized and industrialized at a frantic pace. But there's one large natural enclave which has survived destruction because of technology - not despite it.

This unique area is famed around the world as the site of NASA's John F. Kennedy Space Center, embarkation point for Project Apollo's epic manned voyages to the Moon and soon to be the principal launch and landing site for the revolutionary new Space Shuttle.

But the NASA reservation's other role as Merritt Island National Wildlife Refuge and major portion of the Canaveral

-more-

National Seashore is less well known. It is preserving a portion of Florida's unique natural heritage which may soon cease to exist outside of a few protected areas.

For nature still reigns outside of the relatively small operational areas of this huge NASA launch base which covers 140,000 acres of land and water - that's 220 square miles or about one-fifth the size of the State of Rhode Island.

At the heart of this natural paradise is Merritt Island, a verdant relic of the Florida past with broad sweeps of savanna, marsh and darkly wooded hammocks of palm and oak.

The island is separated from the Florida mainland on the west by the broad Indian River and from the pristine coastal strand to the east by the Banana River and Mosquito Lagoon. These richly productive bodies of water are brackish arms of the sea and are part of one of Florida's most extensive and untouched estuarine systems. They are vital nurseries for the Atlantic coast's commercial and sports fishing industries.

The 30-mile stretch of beach to the east of the island runs north from Cape Canaveral to just south of New Smyrna Beach and has been virtually unaltered since it was first viewed by the early Spanish explorers over four and a half centuries ago.

The restless Atlantic sends waves generated far out to sea dashing up high beaches crested with high bluffs held in place by Spanish bayonets, sea grape, century plants

and gracefully waving sea oats.

There are no empty beer cans or discarded pop bottles. There are no hot dog stands, towering condominiums or glittering tourist traps. Car and dune buggy traffic is banned from the clean, white beach and the sounds are those of the wind, waves and shrieking sea gulls - not honking horns or racing engines.

Finding refuge and making their homes in these lands and waters are 12 endangered or threatened species - more than may be found in any other single location in the lower 48 states.

It is NASA's charter to explore space and not - per se - to acquire and manage wildlife refuges or seashores. How did the space agency's acquisition of its huge reservation on the central Florida east coast come about?

"Federal ownership of this unique area is a direct legacy of Project Apollo," commented KSC Director Richard G. Smith. "NASA bought nearly 84,000 acres of land from its private owners and acquired jurisdiction over an additional 55,800 acres of water and submerged lands from the State of Florida during the early 1960's.

"NASA needed this vast expanse as a buffer zone for the huge Saturn V rocket required to hurl men to the Moon and also as a growth area for the large space vehicles

which might follow. With the successful landings on the Moon and the end of Apollo and adjunct programs, we are looking toward the advent of the reusable Space Shuttle and the prospect of KSC being an operational spaceport into the next century - and beyond.

"From the very beginning," added Smith, "NASA has recognized the unique and delicate nature of the lands and waters within the center and treated them with the greatest care consistent with meeting our operational requirements.

"We are protecting this precious national legacy in our construction projects and in our space operations. All areas not in operational use are managed for us by the U. S. Department of the Interior as a wildlife refuge and as a national seashore. We protect not only the wildlife but the many and varied habitats it needs to survive. We have demonstrated that high technology, natural landscapes and wildlife can co-exist successfully. And because this unique area belongs to all of us, we try to keep as much of it open to the public as operational requirements permit."

Approximately 10,000 acres - or only about 7 percent - of the 140,000 acres under NASA control are actually used for launch complexes, industrial areas, shuttle landing and base support facilities and roadways. Of the remaining acreage, 90,000 acres are managed by the U. S. Fish and Wildlife Service

as the Merritt Island National Wildlife Refuge and about 41,000 acres fall within the boundaries of the Canaveral National Seashore under the jurisdiciton of the National Park Service.

The Merritt Island Refuge is easily the most heavily visited of the 400 wildlife refuges in the federal system and offers a wide variety of attractions to the wildlife and wildlands fancier.

An estimated 1.7 million people visited the Refuge during 1979, including the 1.2 million taking guided tours of KSC facilities. It's legitimate to include NASA's tour bus patrons in the Refuge visitation total as visitors are able to view many different species of wildlife from their buses along the 33-mile, two-hour tour route.

"What makes it so attractive is the wide diversity of wildlife," said Dorn Whitmore, Outdoor Recreation Planner for the Refuge. "More than 280 species of birds have been observed here and it's usually among the top ten areas in the number of species sighted during the National Audubon Society's annual Christmas bird count.

"We have populations of 12 endangered species here," observed Whitmore. Strictly protected here are the southern bald eagle, brown pelican, dusky seaside sparrow, Arctic peregrine falcon, the West Indian manatee or sea cow, the

American alligator, Atlantic salt marsh snake, Eastern indigo snake and four species of large sea turtles - Kemp's Ridley, Atlantic green, hawksbill and loggerhead.

A special treat for visitors is a glimpse of a magnificent bald eagle with its distinctive white head soaring through the skies on wings with a span wider than most basketball players are tall. The eagle winters here and as many as five breeding pairs have successfully nested and raised young in typical recent years.

Brown pelicans give the impression of being awkward buffoons on the ground or perched on pilings. But they are pictures of graceful flight as they soar in precise formation over the dunes or ride a cushion of air inches above the rolling waves along the shore. The brown pelican population here is large and healthy and from 200 to 800 pairs nest annually on a mangrove island rookery in Mosquito Lagoon. Birds from the local colony have been taken to Louisiana to help restore a population stricken by pesticide residues.

The American alligator population continues to grow under protection and now numbers more than 5,000 reptiles, some of them more the 12 feet long.

Florida has a manatee population estimated at 1,000 and perhaps 20 percent of them makes their homes in waters around or adjacent to the Refuge and Seashore. To protect these

amiable giants, strictly-enforced "slow speed" zones have been established for power boats in the waters they favor most. In addition, the boats being built to recover the solid rocket boosters from Space Shuttle launches and tow them up the Banana River to a processing facility will have propulsion systems especially designed to prevent the propeller injuries which have killed and maimed so many manatees.

Human intervention is helping the beleaguered giant sea turtles (some weighing up to 500 pounds) rebuild their numbers in several ways. The females swim ashore at night and crawl up to the dunes to lay their eggs during the summer months but the decline of predators and resulting explosion of a raccoon population which considers turtle eggs quite tasty was resulting in almost 100 percent mortality.

The nest-raiding raccoons are being trapped on the beach and moved to inland areas where they won't interfere with the giant turtles' nesting process. Egg mortality has been reduced to 20 to 25 percent, a loss Refuge officials feel they can live with.

Human help is offered the sea turtles in other ways. A cold wave swept into Florida in January, 1977, and plunged temperatures into the low 20's. More than 140 cold-stunned green, loggerhead and Kemp's Ridley turtles surfaced on the

shallow waters surrounding KSC or were beached on their shores. The reptiles, almost anesthisized by cold water temperatures more than 10 degrees below the 50 degrees which they can tolerate, were rescued and moved into a laboratory on the Refuge for protection until after the cold wave passed.

Wildlife harvesting as well as protection is practiced here and the Refuge offers probably the best waterfowl hunting in Florida. Wintering duck populations have gone as high as 80,000 birds of 23 different species. About 40,000 acres are open to hunting and 3,600 hunters made a bag of 15,000 ducks during the 1979-80 season. Included in the harvest were pintails, widgeons, ringnecks, blue and green wing teal, redheads, canvassbacks, mottled ducks and scaup.

Other attractions on the Refuge include two wildlife drives, each offering leisurely five-mile tours of wildlands heavily populated with birds and other wild inhabitants, and a hiking trail.

The Refuge is also unique in its inclusion of about 2,500 acres of prime citrus groves which are leased to private operators and return nearly $316,000 to the federal treasury annually.

The Refuge is open to the public during daylight hours and the emphasis is on wildlife. The Canaveral National Seashore is more people-oriented but is destined to remain

basically in its natural state.

Created in 1975, the Canaveral Seashore is the nation's newest but already attracts impressive numbers of visitors. In 1979, Canaveral pulled in 860,000 sea, sun and surf-lovers and fishermen to savor its natural delights. This attendance compares with the 1.7 million at Cape Hatteras and the 2.9 million at Gulf Islands, other southeastern seashores which have been longer established and are better known.

"The beach is our basic attraction," said Carol Kruse, Canaveral Seashore naturalist. "And its undeveloped state is a major lure."

Approximately two thirds of Canaveral's visitors enter the seashore via Florida Route 402 which ends at Playalinda Beach, 12 miles due east of Titusville. The Space Shuttle launch pads at Complex 39 are easily visible from this southern entrance to the seashore where a road wends north behind the high dunes for a distance of five miles before ending at Camera Pad 10.

The remaining third enter the park at the Apollo ranger station on Florida A1A 10 miles south of New Smyrna Beach. An unpaved road runs to the south for a distance of five miles before coming to an abrupt end at the site of an old Coast Guard station.

In between the north and south access roads is a pristine

15 mile long strip of beach which can't have changed much since the Spaniards first sailed past in the early 16th century. Automobile or dune buggy traffic is prohibited on the beach and visitors who wish to sample the delights of this wild area must pull their bodies out of their vehicles and hoof it.

For those with a love of nature, the vistas from the high dunes are breath-taking.

"All that undeveloped beach is our prime reason for being," said Kruse.

The Canaveral National Seashore embraces a total land and water area of 57,600 areas. The 41,000 acres of NASA-owned land is in the south. The remaining acreage is in the north end of the seashore and was obtained by absorbing Florida's Apollo State Park and buying privately-owned lands.

A comprehensive management plan for the new seashore is in the works but indications are that it will remain basically in its wild state.

The fishing in the Atlantic surf to the east and in the brackish waters of Mosquito Lagoon to the west is superb. Worthy quarry for the angler are spotted weakfish or sea trout, drum, redfish or channel bass, pompano, bluefish, whiting, snook and the ubiquitous mullet, the latter a vegetarian which must be caught in a net.

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Among the other attractions is Turtle Mound, an Indian midden or shell mound near the northern entrance to the seashore. Turtle Mound, a small mountain of oyster shells heaped up by the ancient Indian inhabitants of the region over a 600-year period from 800 to 1400 AD, rears up 35 feet above the surrounding terrain to provide a magnificent view of Mosquito Lagoon and its unspoiled mangrove islands.

Like the Refuge, the Seashore is open to the public from sunrise to sunset. Boat ramps are located on both the Refuge and Seashore to accommodate those who wish to launch small craft to ply the waters of the Indian River and Mosquito Lagoon.

Details on visiting these public areas of the nation's spaceport may be obtained by writing or calling: Refuge Manager, Merritt Island National Wildlife Refuge, P.O. Box 6504, Titusville, FL. 32780 (Area Code 305-867-4820). Superintendent, Canaveral National Seashore, P.O. Box 2583, Titusville, FL. 32780 (Area Code 305-867-4675).

It's ironic but true that one of the most beautiful and tranquil places on Earth owes its preservation to a high technology program designed to carry humanity to another world.

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NASA News

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National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Karl Kristofferson
305867-2468

For Release:

September 1980

Special for Marion Co. Education and Community Involvement Program

RELEASE NO. KSC 135-80

BONANZA FROM SPACE

KENNEDY SPACE CENTER, Fla.--It seems only yesterday that a pencil-thin Juno I rocket roared into space from Cape Canaveral to hurl a grapefruit-sized artificial moon called Explorer I into orbit. A lot has happened since that January day in 1958. There have been bitter disappointments and tragedy as well as elegant adventures and spectacular triumphs. But the pluses far outstrip the minuses, for never before has an investment by the American people paid off so handsomely for so many in so short a time.

We have watched spellbound as American astronauts cavorted on the silvery surface of the moon. We have gazed upon the barren face of Mercury, the whirling clouds of Venus and the ringed beauty of distant Saturn. We have peered into the seething caldrons of mighty Jupiter, witnessed the indescribable beauty of a Martian sunset and thrilled to the mind-boggling adventures of robot spaceships hurtling towards the outer limits of the solar system and the infinity beyond. We make telephone calls and view TV programs beamed from space, prospect from orbit, and monitor crops, weather and pollution from the skies -- all by satellite.

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Our leap to the stars has spawned new industries, services and products. It has provided hundreds of thousands of high technology jobs and supported millions of Americans in all classifications and skills in all parts of the country. It has created billions of dollars within the national economy in virtually every segment of commerce and industry. It has stimulated and produced a cadre of engineers, scientists and technicians and unique research and development facilities for future technological growth and economic expansion. It has set new standards for education, enhanced American prestige and security and encouraged international cooperation for peaceful scientific endeavors. It also has fostered a deeper appreciation of the Earth, life and humanity.

Ironically, the speed in which space technology has entered the mainstream of modern life has left many Americans unaware of its influence on their daily lives.

The most important dividends are being realized from programs designed to benefit people. These come from the phalanx of unmanned satellites streaking silently overhead. Weather satellites, for instance, have extended the accuracy of weather forecasting and saved billions of dollars for the American businessman and farmer. They detect and track major storms, hurricanes and threatening weather patterns early enough and precisely enough to permit timely warnings and decisions. Examples include routing of air traffic, marine navigation, agricultural warnings, water management and the protection or evacuation of threatened flood and storm areas.

Experimental oceanographic satellites are setting the stage for an operational network that will provide ships at sea with twice-daily maps of their routes, showing hazards and expected weather conditions.

Global communications satellites built and launched by this country play an important role in the conduct of our nation's business, cultural and foreign policy transactions with other countries, and provide a pathway to inform Americans of events and happenings elsewhere in the world. Commercial satellite networks, launched by NASA but owned and operated by private firms, daily whisk millions of telephone calls, television programs and computer-to-computer conversations across the length and breadth of America. These also include maritime communications satellites which are providing the first, continuous, real-time, high quality communications for ships at sea.

Experimental communications satellites, such as NASA's Applications Technology Satellite, have opened new vistas of human understanding and social progress. Serving as a two-way radio and TV link, it has provided educational and health services to isolated communities in Appalachia, Alaska and the Rocky Mountain regions. It was loaned to the Government of India and used to broadcast programs on population control, farm productivity, family hygiene and the like to some 5,000 villages in seven Indian states.

Of all the exotic space sentinels whizzing about the globe perhaps none can match the potential of a new breed of earth resources satellites called LANDSATS. Using special sensors

to record unique heat images radiated and reflected by land, water, minerals, vegetation and man-made structures, these amazing robots can tell what kinds of crops are growing and where, when a stand of trees is infested with killer germs or insects, where surface geological features suggest good prospects for oil and minerals. They record changes in the ecology brought on by forest fires, earthquakes and surface mining. They inventory water resources, measure snowfalls, observe rising waters and measure the probable course and degree of flooding. They keep a watchful eye on the spread of pollution and provide assistance to states and communities for land planning and management.

Surprising as it may seem, we even benefit from investigations of the sun, moon and planets. Studies of the sun, for instance, shed new insight into solar physics and its impact on Earth's weather, as well as new information on high temperature gases that conduct electricity and interact with magnetic fields, holding forth the promise of new energy sources here on Earth such as nuclear fusion--the process of the stars--which would give us an inexhaustible supply of cheap, non-polluting energy.

Studies of the undisturbed atmospheres of Mars, Venus, Jupiter and Saturn are providing views of evolutionary trends, weather patterns and radiation effects impossible to distinguish on Earth. It was the Venusian atmosphere that first alerted us to the presence of chlorine in the Earth's upper atmosphere and its effect on our ozone shield which protects us from the harmful effects of ultraviolet radiation.

America's space program, too, has uplifted man's physical and spiritual horizons. Our Apollo program realized humanity's age-old dream of walking on the moon. When astronaut Neil Armstrong uttered those electrifying words -- "Houston, Tranquility Base here. The Eagle has landed." -- we became citizens not just of our globe, but of the cosmos. Skylab, our first manned space station, strengthened our new-found cosmic ties by proving that humans could perform useful work and live in space for extended periods. It also gave us a peek at the promising rewards to be realized from manufacturing processes conducted in the vacuum and weightlessness of space.

Our grasp for the stars has also produced bounties of another kind. They seldom make headlines. Nor do they stir the imagination like manned voyages to the moon or robot spaceships hurtling past distant worlds. Yet, their importance cannot be diminished, for they touch the lives of every man, woman and child on this planet.

They are by-products of the space age such as pocket calculators, fire retardant paints and fabrics and new metals and alloys that make automobile and aircraft engines run better, longer and safer.

They are medical advances such as electronic patient monitoring systems for hospital intensive care units, suitcase-sized portable medical units which permit on-the-scene emergency treatment under the supervision of a physician miles away, artificial heart valves that resist infection and rejection by the body, snap-on snap-off artificial limbs for amputees,

rechargeable heart pacemakers, new surgical instruments for the quick safe removal of eye cataracts, new procedures for the treatment of burns, eye-movement switches for paralyzed persons, biological isolation garments that provide a sterile environment for cancer patients undergoing chemotherapy, and even a machine that lets blind people identify paper money.

Space technology has revolutionized the computer field and elevated the U. S. to leadership in computer technology around the world. Today, computer systems needed to satisfy the awesome demands of space exploration are being adapted to a wide variety of business and industrial uses, including electric utility control, oil field production and oil and gas pipeline transmission. Minicomputers which made it possible for men to travel to the Moon and back are being used by banking and financial institutions, retail department stores, airline ticket offices and government agencies.

NASTRAN, a computer program developed for the design of space structures, is used by the Department of Transportation to improve railroad track and roadbed systems, and by the railroad companies to design new lines of freight and hopper cars to carry America's expanding coal shipments. It is also used extensively by architectural firms to design skyscrapers and sports stadiums, as well as nuclear reactors and nuclear power plants to generate electricity.

Supercomputers of unimaginable ability that evolved from the impetus of the space program are tackling problems that affect all mankind, such things as weather and climate forecasting, management of natural resources, earthquake detection, pollution monitoring and medical diagnosis.

Space Technology is also helping to safeguard the environment and conserve natural resources. A revolutionary new sewage treatment plant in Orange County, California, employs a technology initially developed to improve the efficiency of rocket motors. The system extracts solids from the sewage, then burns them to produce activated carbon which is used to filter the remaining fluids. The only residue is a small amount of inert ash. Sludge, which is becoming a formidable problem for New York, Philadelphia and other big cities, is virtually eliminated. The cleaned fluids from the system can be returned to their natural environment and used for drinking water or recreational purposes.

Another example of space technology at work for the benefit of everyone can be found in the trans-Alaska pipeline constructed to bring vitally needed oil to the lower United States. To maintain the finely tuned balance of nature along the pipeline route, an efficient heat rejection device was installed to keep from melting the permafrost around the pipeline supports. The need was satisfied by heat pipes, thermal control devices used on the Skylab Orbital Workshop and unmanned satellites.

Heat pipe technology is also used in home furnaces to recover and recirculate heat that otherwise would go up chimmey flues, thereby reducing energy consumption. Similar heat recovery systems are being used in industry to recover, up to 75 percent of waste thermal energy.

Fuel cells and solar cells that generate electricity to power spacecraft show great promise for down-to-earth uses. Already, fuel cells are being employed at a number of locations around the country to supplement conventional generating systems. Windmills, tidal action and ocean temperature differentials are being explored as energy sources.

Alternate fuels used for space vehicles are being studied as a means of reducing petroleum demands. In one method, hydrogen produced from the gasoline in an internal combustion engine is utilized to improve the engine's fuel consumption and reduce exhaust emissions.

Aeronautics, too, has benefitted from space exploration. NASA has identified technologies both near-term and those that can be ready in 10 years which could reduce fuel requirements of commercial jet aircraft by as much as 50 percent. If these advances were incorporated into the number of commercial aircraft flying in the U. S. today--about 2,100--it would save nearly 350,000 barrels of oil per day. Based on estimates of fleet size in the 1985-90 time period, savings could reach as high as 12 billion gallons of jet fuel annually, or about $3 billion each year. These savings will be achieved through reduced weight, new wing and body designs that cut down on drag

or air resistance, quieter and more efficient engines, new flight control systems and better operating procedures in the air, on the ground and in and around airports.

But what of the future?

Between now and the turn of the century, we will probably see an extension of proven concepts and technologies already investigated to some degree. These include satellites supporting a rapidly growing need for personal and business communications, ranging from disaster warning and education to direct facsimile news distribution, extensive financial transaction systems and three-dimensional (holographic) teleconferencing producing completely life-like images of people in their normal office or home settings.

We should have sophisticated, operational satellite systems, to forecast the global production of major crops on a weekly basis, to extend the range and accuracy of weather prediction, and to study and monitor climate, natural resources and pollution on a scale previously unheard of.

If national priorities permit, we can envision huge automatic satellites - miles in extent and hovering in geosynchronous orbits - to convert sunlight to clean electrical energy and to send it to Earth by microwave beam, and a permanent space station undertaking a wide range of activities such as medical and scientific research, assembly of solar power stations and the manufacture of industrial and commercial products.

Exploration of the planets will continue, probably not by humans, but by new generations of instrumented spaceships which will be capable of landing on alien surfaces and returning samples to Earth. The search for extra-terrestrial life will receive added emphasis, from Earth-based optical and radio-telescope systems and from robot galactic probes.

Beyond the year 2000, planners foresee even more ambitious undertakings: lunar bases supporting scientific research or utilization of lunar materials, self-sufficient space colonies, recovery and transport of minerals from asteriods, commercial space transportation of people and goods, automated spacecraft traveling beyond our solar system to the nearby stars, and manned exploration and establishment of outposts on the less hostile planets and natural satellites of the solar system.

Our adventure in space has barely begun. Ahead lies the most exciting and rewarding era in the history of man. And the clock is already ticking. The first flight test of the reusable Space Shuttle, the key to our future operations in space, will be conducted next year. By 1982, the Shuttle will begin operational missions from the Kennedy Space Center, opening the physical frontiers of tomorrow and enriching the human mind and spirit.

# # #

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National Aeronautics and
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**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
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Educational and Community
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# THE SPACE SHUTTLE...
# THE BEGINNING OF A NEW ERA IN SPACE

KENNEDY SPACE CENTER, Fla.--The heroic, seat-of-the-pants era of manned space flight is over!

Disappearing into the romantic past like the legendary Waldo Peppers and Red Barons of aviation, the astronaut hero-figures of Mercury, Gemini and Apollo will be replaced by airline-type pilots and scientists when the Space Shuttle begins its flights in 1981.

The Space Shuttle is a combination of a rocket, a spacecraft and an airplane. And its journeys to and from orbit around the Earth will be conducted with all the precise regularity, safety and comfort of an airline operation.

The crew and passengers will fly in shirt-sleeves. Except for the lack of such amenities as an in-flight cocktail served by a pretty stewardess, the flights should be nearly as comfortable as a hop from Dallas-Fort Worth to, say, Acapulco.

NASA isn't quite ready to offer your aging grandmother or Uncle Charlie slots on the crew, but the Space Shuttle "G" (or gravity) loadings on liftoff and reentry will be well within the physical limits of anyone in good health.

In essence, the Space Shuttle is the core of a revolutionary new transportation system designed to provide a routine, economical and safe access to and from space for commercial, scientific and defense needs.

In time, liftoffs from NASA's Kennedy Space Center in Florida will be no more the topic of a TV spectacular than the takeoff of a 727 for New York or a 747 for London.

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## HOW IT ALL BEGAN

The development of the Space Shuttle parallels the development of the large rocket boosters that opened the era of space exploration. The story begins in the late 1950s when spacecraft designers wrestled with the problem of how to bring back returning spacemen without burning them to cinders.

When a spacecraft slices into the Earth's air ocean, it is traveling at speeds up to 25,000 mph. Resulting air friction creates temperatures of around 5,000 degrees. Furthermore, the spacecraft's angle of reentry must be precise. Even a small error can throw it thousands of miles off course with disastrous consequences. As the late astronaut Gus Grissom once remarked: "We literally explode a man into space, then bring him back like a meteor."

Apollo astronauts later referred to their reentry procedure as "sliding down the stovepipe." Their bell-shaped craft, only slightly more maneuverable than a descending rifle bullet, had to be guided with unerring accuracy through an invisible "window" in the atmosphere 300 miles wide and 40 miles deep. Not an easy feat considering they had to take aim from thousands of miles out in space. If they barreled in too steeply, they would be crushed and incinerated by the thickening air mass. If they came in too shallow, they would bounce off the Earth's blanket of air and become aimless wanderers in space. Their final descent to an ocean landing was controlled by what veteran spaceman Tom Stafford once described as the most gratifying sight in the world to a returning astronaut, "those big, beautiful landing 'chutes."

Even as the Apollo program was taking initial form, designers knew there had to be a better way to move in and out of space. Huge rockets, such as the 363-foot-tall Apollo/Saturn V, then on the drawing boards, would be intricate and costly to build and launch. Moreover, they would be totally expendable...each complete vehicle a one-shot investment. Only the Command Module, or crew compartment, of the hugh moon rocket would return safely to Earth.

Designers knew what they wanted--some kind of reusable vehicle that could be launched quickly and economically, maneuver easily in space, survive the hazards of reentry and fly through the Earth's atmosphere and land airplane fashion on ordinary airport runways. In short, the characteristics of an airplane and a spaceship. Soon the skys around major research centers in the country blossomed with all sorts of

weird contraptions, causing one old timer to remark, "It's like the birth of flight all over again. Only this time we have to do it without wings."

Researchers hit paydirt in late 1961. An unusual, wingless shape emerged from wind tunnels at NASA's Langley Research Center in Virginia. It wasn't much to look at, resembling a halved apple--rounded on the bottom and flat on top. But tests proved it to be airworthy, and with the addition of small fins and rudders it could be maneuvered with relative ease. Elated designers dubbed their newest creation the "lifting body," and set out to prove its merit.

The first lifting body was flight tested in 1962, the same year that astronaut John Glenn (now U. S. Senator from Ohio) became the first American to orbit the Earth. The M2F1, a fragile craft constructed of plywood and tubular steel, was towed to a height of 10,000 feet and glided to safe landing near Edwards, California. Veteran test pilot Milton Thompson, who formerly had jockeyed the needle-nosed X-15 rocket plane to an altitude of 211,000 feet and a speed of 3,700 mph, called the flight the most unique of his career. "It was an odd feeling to gaze from the canopy and not see any wings," he remarked.

By 1968, advanced lifting body designs had been piloted to heights approaching 100,000 feet and speeds beyond sound. Unmanned versions were lofted into space by rockets, rammed back through the atmosphere at extreme velocities and guided by radio control to safe landings in the ocean. A year before Apollo 11 began its historic journey to the surface of the Moon, designers were convinced that the stubby, wedge-shaped lifting body was indeed the shape of tomorrow. They were not far off the mark. But, while the lifting body concept remained intact, the infusion of new technology--much of it gained from the Apollo program--altered the shape of things to come.

## THE NEW LOOK

The Space Shuttle consists of four pieces of hardware, all but one reusable. Together, they resemble a jetliner sitting on pontoons. The Shuttle orbiter is the main package. It is a delta-winged spaceplane about the size of a DC-9 jetliner containing a crew compartment, controls, life support systems, a 60 by 15 foot cargo bay, three main rocket engines for liftoff and two smaller rocket engines for maneuvering in space and to prod it out of orbit for return to Earth.

Directly beneath the Orbiter is a huge external fuel tank that feeds propellants to the Orbiter's main engines during liftoff. By positioning the main fuel supplies externally, designers were able to cut down on the Orbiter's size and weight and allow more cargo space for mission operations. Perched on either side of the external belly tank are solid rocket motors to provide extra thrust for takeoff. Thus, the Shuttle is designed to go up as a four-piece combination--passenger vehicle, fuel tank and a pair of booster rockets--and come back as individual pieces.

At liftoff, the Orbiter's three main engines and the two solid booster rockets are ignited. At an altitude of about 25 miles, the two solids shut down, pop off automatically and parachute into the ocean off Cape Canaveral. The boosters, located by built-in homing devices, are recovered and returned to the Cape for refurbishing and reuse.

Shortly after the Orbiter is inserted into orbit, the external belly tank runs dry and the Orbiter's main engines shut down. They will not be used again during the mission. The belly tank is jettisoned and pointed back towards Earth by a small de-orbit motor. It is the only piece of the Shuttle package which is expendable.

When the Orbiter completes its mission, it returns to Earth, zips through the atmosphere like any other aircraft and glides to landing on an ordinary runway.

The actual landing--to a commercial airlines passenger--would be somewhat of a "grabber". It will be computer controlled and accomplished "dead stick"--without power.

The glide slope will be a steep 22 degrees, compared to the two and a half to three degrees for a commercial airliner on a landing approach. "Flare" maneuvers will flatten the glide slope to one and a half degrees just before touchdown at a speed just under 200 miles per hour.

Like the solid rocket boosters, the Orbiter will be "recycled." Each Orbiter will have a design life of about 100 missions.

Four Orbiters are being built under contract with Rockwell International. The first to roll from the company's assembly plant in California's Mojave Desert was designated Orbiter 101 -- and named "Enterprise." The aerodynamic design and control

functions of the Orbiter were tested and proven during drop tests of the "Enterprise" in the summer and fall of 1977. But it is not the "Enterprise" which will be the first Orbiter to carry Americans into space. That falls to Orbiter 102 -- "Columbia" -- which was delivered to the Kennedy Space Center in March 1979. It is currently being prepared for launch in March 1981.

## THE LAUNCH BASE

NASA's John F. Kennedy Space Center near Cape Canaveral, Florida, has been designated the prime launch and recovery site for the Space Shuttle and its facilities have been reshaped for their new role. Mission planning and control is under the direction of NASA's Lyndon B. Johnson Space Center near Houston, Texas.

Among the factors which led to the designation of the Apollo/Skylab launch site as the prime Shuttle base was the existence of Launch Complex 39 with structures and facilities readily adaptable to Shuttle requirements.

The huge Vehicle Assembly Building - used in the Apollo, Skylab and Apollo Soyuz Test Project missions - has been modified for erection and mating of the external tank, boosters and Orbiter in the high bay portion. Also modified for Shuttle were Pad A and the mobile launchers used to assemble and launch Apollo/Skylab flight hardware. The second pad at Complex 39, Pad B, is also being modified and will be ready for space operations in 1983.

Among the new facilities constructed were the Orbiter Processing Facility and a landing runway for Orbiters returning from missions in space.

The Orbiter Processing Facility is analogous to a sophisticated hangar in which the plane-like Orbiter receives needed servicing and maintenance between flights. Its two high bays permit the handling of two Orbiters in parallel flow.

The Orbiter Landing Facility - perhaps the finest single strip in the world - has been completed and is already being used by aircraft traffic. The concrete runway is 15,000 feet long, 300 feet wide and has a 1,000-foot overrun at each end. Concrete thickness is 16 inches at the center, sloping to 15 inches on the sides.

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In the Free World, the Orbiter runway is matched in length and width only by a strip at the NASA Hugh L. Dryden Flight Research Center/Edwards Air Force Base in California's Mojave Desert. It is at Dryden/Edwards that the Orbiter will land after its first four missions in space. Not until the fifth mission in the Orbital Test Flight series will the Orbiter be committed to a landing at the Kennedy Space Center runway.

## WHAT THE SHUTTLE WILL DO

The Space Shuttle will eliminate the rather large stable of launch vehicles in use today...both civilian and military. Establishment of a second major Shuttle base at Vandenberg Air Force Base in California will provide polar as well as equatorial capability.

The Shuttle will be used to place satellites in orbit. And just as important, it will be able to retrieve malfunctioning satellites and repair them in orbit or return them to Earth.

This capability will have particular importance with the predicted growth requirements for additional weather, earth resources, communications and navigational satellites.

No longer will it be necessary to "write-off" a multi-million-dollar satellite due to a malfunction following launch.

The importance of this "rescue" ability can be illustrated by a space-age "horror story."

Orbiting Astronomical Observatory-1, a $50 million spacecraft designed to give man an outpost from which to observe the universe from above the Earth's shimmering, light-absorbing atmosphere, was successfully launched by an Atlas-Agena on April 8, 1966. Two days after launch, the spacecraft's battery failed, dooming the $50 million spacecraft and its mission.

Had the Space Shuttle then been available, the failed spacecraft could have been repaired in orbit or returned to Earth. The rescue mission could have been performed at a fraction of the spacecraft's replacement cost.

The Shuttle will be able to refuel orbiting satellites. And - some day - a space station may be assembled and supplied in orbit using the Shuttle.

The United States already has a heavy international involvement in a variety of space projects, but this will be intensified in the Shuttle era.

Occupying that huge cargo bay in the Orbiter on many flights will be the Spacelab, a pressurized manned laboratory and an instrumented platform with instruments for experiments which must be exposed to the space environment.

Spacelab is being developed, financed and built by 10 nations of the European space community - Austria, Belgium, Denmark, France, West Germany, Italy, The Netherlands, Spain, Switzerland and the United Kingdom.

The pressurized manned laboratory modules will permit scientists and engineers to work in a normal, shirt-sleeve environment. The European investment in this major Shuttle element will be substantial - in the vicinity of $300 to $500 million - and with it will come the opportunity to share more fully in the many benefits to be derived from space.

It will also bring membership in a very exclusive club. All of those who have flown in space to date have been American astronauts and Soviet-bloc cosmonauts.

For the first time, Spacelab will allow non-astronauts from any country to go into space. It will be possible for scientists, engineers, professors and graduate students, men or women, to take their equipment into orbit, conduct experiments and return to Earth with their collected data.

Like other Space Shuttle elements, the Spacelab will be reusable. Each Spacelab may be flown as many as 50 times over a 10-year period.

The Space Shuttle Orbiter will be operational in relatively low Earth orbit - up to 500 miles. Missions requiring higher orbits or escape trajectories to the Moon or the planets will require an upper stage.

The Space Shuttle will do what we now find beneficial in space. It will deploy Earth resources satellites, satellites to improve navigation for airplanes and ships, satellites to survey food crops, and spacecraft to increase scientific applications such as astronomy and oceanography.

It will do all these things - and more - much less expensively than we are able to do them now.

The first U. S. satellite - Explorer I - cost about $100,000 per pound to place in orbit. The present pound-in-orbit cost is from $600 to $1700. When the Space Shuttle becomes operational, the cost of a pound of payload delivered to orbit will drop to approximately $160.

With today's space hardware, the door of space has barely been opened. But, with the Shuttle, the door will be wide open. Near-Earth space will become a new home and work place for people, just as the land, the oceans and the airways are today.

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# NASA News

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**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

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Leslie Vock
305 867-2468

RELEASE NO. KSC 144-80

## NORTH VERSAILLES COMPANY WINS NASA CONTRACT

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded a $85,821 contract to H. J. Lauris Co., of North Versailles, Pennsylvania, to rebuild and replace 58,000 feet of overhead electrical power lines on the Space Center.

The lines have deteriorated through constant exposure to the corrosive effects of salt-spray from the nearby Atlantic Ocean. The lines support NASA Space Shuttle activities, serve as a power link between KSC's Industrial Area and Launch Complex 39, and service Air Force Eastern Space and Missile Center facilities on KSC which will support Space Shuttle operations.

Complex 39's twin launch pads are within a quarter of a mile of the Atlantic Ocean. Complex 39 facilities, originally built for Project Apollo's manned missions to the Moon, have been modified to process and launch the Space Shuttle, the key element of a new space transportation system that will open the door to the more routine and economical use of space for commercial, scientific and defense needs.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled for its first flight in March, 1981.

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NASA News

National Aeronautics and
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**John F. Kennedy Space Center**
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SPACEPORT VISITORS VIEW HISTORY: RECEIVE GLIMPSE OF THE FUTURE

KENNEDY SPACE CENTER, Fla. - A funny thing happened on the way to the Moon!

The Florida Spaceport from which the lunar exploration missions were launched became the state's fourth most popular tourist destination. The lure was the awesome, almost impertinent magnitude of the Apollo lunar venture and the massive machines required to carry it out.

The triumphs of Apollo, Skylab and the joint mission with the Soviet Union - the Apollo Soyuz Test Project - have faded into history. But attendance remains brisk. This time the lure is the quickening pace of preparations for the era of the Space Shuttle, a bold, new approach to space transportation which will reassert the nation's dominance in space.

With the launch of the first Space Shuttle mission scheduled for no earlier than March, 1981, the visitors continue to pour in despite higher gasoline prices and a recession which has heightened unemployment.

In July, for example, a total of 157,359 patrons boarded air-conditioned tour buses for close-up glimpses of the Kennedy

Space Center and adjacent Cape Canaveral Air Force Station. This attendance figure is 3.7 percent higher than the 151,770 logged during July, 1979, when gas prices and unemployment were appreciably lower.

If present trends continue, the 15 millionth tour patron since the guided bus tours were initiated in 1966 will step aboard a gleaming red, white and blue tour bus in late August. Tour patronage figures don't tell the whole story. An estimated 20 percent of those coming to the center don't take the bus tours, raising total attendance over the past 14 years to approximately 18 million.

The Kennedy Space Center with its gigantic launch facilities is on the eastern end of the belt of tour attractions girdling the peninsula's waist from the Atlantic Ocean to the Gulf of Mexico.

Located 150 miles south of Jacksonville, 230 miles north of Miami and a meager 50 miles east of Orlando, the Spaceport's Visitors Center is an easy shot for anyone driving Interstate Routes 95, 75 and 4, Florida's Turnpike and U. S. Route 1.

The Visitors Center is accessible via the NASA Causeway from U. S. Route 1 two miles south of Titusville or Florida Route 3 from Merritt Island.

Nestled amidst orange groves in view of the huge Vehicle Assembly Building, integration point for the Saturn V/Apollo space vehicle which carried astronauts to the Moon and the Space Shuttle which will begin flying next year, the Visitors Center boasts a wide variety of attractions.

Rearing skyward in a "rocket garden" on the west side of the exhibit area are the actual rockets and full scale replicas of spacecraft which established the United States as the space power after a slow and halting start. The names are out of the history books: Mercury/Redstone - Mercury/Atlas - Gemini/Titan - Thor/Delta - Juno - Jupiter C/Explorer.

Dynamic and static exhibits in the two air-conditioned exhibit halls chronicle the space programs which have carried astronauts into orbit around the Earth and to the surface of the Moon and unmanned spacecraft to the limits of the Solar System - and beyond.

A space-suited "astronaut" periodically roams through the exhibit areas to demonstrate the latest in out-of-this-world haberdashery and answer questions on all aspects of space flight.

Space science demonstrations explain the esoteric techniques of space flight in down-to-Earth language and dramatic movies and multi-media shows explain the past and explore the future in living color.

If seeing the raw material of history is your bag, there are flown-in-space Mercury, Gemini and Apollo spacecraft as well as a full-scale replica of the Skylab Multiple Docking Adapter in which astronauts worked in space for months at a time.

If you're into lunar rocks, there are several samples returned from the Moon by Apollo astronauts to admire. And if you're "wowed" by off-beat forms of transportation, you can kick the tires - figuratively speaking - of a Lunar Rover Vehicle.

And just what does the conquest of space mean to the man on the street or the little old lady from Dubuque? The "pay-off" in the form of more accurate weather forecasts, enhanced global communications, better means of exploring and managing the Earth's resources, and in the creation of sophisticated new technologies leading to whole new industries is explained through exhibits provided by governmental agencies and industrial firms.

The attractions at the Visitors Center are open to the public without charge but about 80 percent of the Spaceport's visitors elect to take the guided bus tours which are operated for nominal fees designed to defray operating costs.

The two-hour tour offers glimpses of the past and previews of the future. Along the tour route are the massive facilities of Complex 39, used for Project Apollo and the Skylab program, and since revamped for the Space Shuttle.

It also covers the historical facilities on adjacent Cape Canaveral Air Force Station from which the manned Mercury and Gemini flights, unmanned missions to the planets, and scores of scientific, weather and communications satellites have been launched.

NASA retains two active launch complexes on "The Cape" - Delta Complex 17 and Atlas/Centaur Complex 36. An added goodie is the possibility of booking a tour on the day of a launch. In addition to receiving a tour, patrons are taken to a viewing area where they may obtain a close-up glimpse of lift-off and experience the sound and fury of a rocket in flight.

There are no "rain checks". If the launch goes on schedule, it's a fringe benefit, a chunk of serendipity on top of the tour itself.

Those wishing to coordinate their tour with a launch may check on the next opportunity by calling KSC's tour concessioner - TWA Services, Inc. - at Area Code 305-452-2121. The toll-free number for calling inside Florida only is 800-432-2153.

Four missions now remain on KSC's launch schedule for the year - one in September, two in October and one in November.

Tour prices are $3 for adults, $1.75 for youths from 13 to 18 years of age,and $1 for children from 3 to 12 accompanied by an adult.

Tours leave the Visitors Center at the frequent intervals needed to handle the flow from 8 a.m. until two hours before sundown every day of the year with the exception of Christmas.

"We like to think of KSC as a fun place as well as a focal point of the nation's space activities," said Arnold I. Richman, chief of KSC's Visitors Services Branch. "We constantly try to enhance our exhibits, movies and science demonstrations as well as our tour operation to make them more enjoyable and meaningful."

Public interest in space remains high with more than 1.6 million visitors a year taking advantage of the NASA "show and tell" activities here during each of the past two years.

Richman noted that a major expansion of the Spaceport's visitors facilities is being planned.

"On May 1, 1980," said Richman, "TWA Services began a new 10-year concession agreement with KSC under which the company has agreed to invest up to $8.5 million in construction of new visitors facilities.

"Under study are a large screen format theater similar to the one in the National Air and Space Museum in Washington, D.C., a 500-seat theater, a new exhibits building, a moonscape and lagoon, new food and souvenir facilities, and additional support facilities. This major expansion will greatly enhance our ability to inform, entertain and accommodate the large numbers of visitors we expect when the Space Shuttle era gets in full swing," said Richman.

The major tourist attraction accidentally created on the way to the Moon shows sure signs of coming of age.

# # #

NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Dick Young
305 867-2468

For Release:
August 22, 1980

RELEASE NO. KSC 150-80

## NEW WEATHER SENTRY SCHEDULED FOR LAUNCH SEPTEMBER 9

KENNEDY SPACE CENTER, Fla.--When the 1981 hurricane season rolls around, a new weather sentry will be on station to train its keen eyes over much of the Western Hemisphere and provide timely warnings of violent storms which might endanger life or property.

GOES-D, a new and smarter version of the GOES-East satellite which tracked Hurricane Allen during its furious romp through the Caribbean Sea and the Gulf of Mexico in August, will be launched by the Kennedy Space Center aboard a Delta rocket on September 9. The launch opportunity for that date extends from 6:27 to 6:58 p.m. EDT.

Hurricane Allen, which slammed into the coast of Texas on August 9-10, was the second most powerful storm to enter the Gulf of Mexico this century. It lost some of its fury before striking the United States but was still a potent storm.

Yet, only two American deaths were directly attributed to the hurricane. And damage was surprisingly light for a giant storm passing through a heavily-populated region like the Brownsville-Corpus Christi area.

The National Oceanic and Atmospheric Administration used its Geostationary Operational Environmental Satellite-East hanging 22,250 miles above the equator at 75 degrees west longitude to track the storm from its birth as a disturbance off the coast of Africa to its death over the flat plains of North Texas.

The storm left 12,000 persons homeless on the Caribbean island of St. Lucia and killed hundreds in Haiti. And while Texas suffered "significant damage", it was nowhere as extensive as was feared might occur.

-more-

"The really big advantage is that nobody is taken by surprise anymore," said Don Gaby, manager of NOAA's Satellite Field Station in Miami, Fla. "The beauty of the satellite is that it is always available to show us the whole area and I think we see it pretty well.

"Since the inception of the satellite program in 1966," said Gaby, "we have never failed to see the birth of every tropical cyclone in the Atlantic and East Pacific Oceans.

"The satellite is the backbone of the hurricanewarning system and the primary source of observations until the storm approaches land where it can be observed by aerial reconnaissance and ground radar."

Day and night, every 30 minutes for over a week, GOES-East took photographs of most of the Western Hemisphere to keep a close watch on Allen as the storm moved steadily westward through the Caribbean and into the Gulf of Mexico.

Thanks to space-based tracking by GOES-East, augmented by aerial reconnaissance and ground radar, the citizens of Brownsville and Corpus Christi had plenty of time to prepare for the storm's arrival.

Spurred, perhaps, by memories of Hurricane Camille - which killed 258 people in Louisiana and Mississippi in August, 1969 - the people of Texas largely heeded NOAA advisories and left the flat coastal regions. When Allen with its raging winds and torrential rains came roaring ashore, it was greeted by boarded windows and unoccupied homes.

The GOES-East satellite which tracked Hurricane Allen will be retired after the new GOES-D spacecraft to be launched on September 9 is checked out in orbit and goes on station at 75 degrees west longitude.

The GOES satellites were developed by NASA as part of its on-going weather observation and reporting work, which includes several other types of satellites.

The NOAA-owned GOES weather satellites are launched and checked out by NASA and then turned over to NOAA for regular operations.

The GOES satellites also provide detailed temperature data which can be used to develop freeze forecasts for Florida's billion-dollar citrus belt.

# # #

NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Leslie Vock
305 867-2468

For Release:

August 28, 1980

RELEASE NO. KSC 151-80

## MIMS FIRM AWARDED SHUTTLE PAD FENCE CONTRACT

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded a $43,500 contract to Industrial Steel, Inc., of Mims, Florida, in support of the Space Shuttle.

The fixed price contract is for delivery and installation of a security fence around the Fixed Service Structure on Space Shuttle Launch Complex 39's Pad A.

The Fixed Service Structure is a square steel structure providing access to the shuttle orbiter and the pad's Rotating Service Structure. The open framework structure is 247 feet high with an 80-foot-tall fiberglass lightning mast mounted on top of the structure to protect the spacecraft from lightning strokes.

An emergency exit, or slidewire, system is also located on the Fixed Service Structure and provides an escape route for personnel aboard the orbiter and on the Orbiter Access Arm until the final 30 seconds of the countdown. Five slidewires with two flat-bottom baskets suspended from each are positioned for easy access in the event of an emergency. The slidewires extend from the level of the Orbiter Access Arm of the Fixed Service Structure to the ground on the west side of the pad.

# # #

NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

F.5 #17

Hugh Harris
305 867-2468

For Release:

August 29, 1980

RELEASE NO. KSC 155-80

## HAIRY "OFFICER" RIDES RIGHTHAND PATROL CAR SEAT

KENNEDY SPACE CENTER, Fla.--Workers here who spot an unusual looking "officer" riding in the righthand seat of a KSC Security patrol car needn't worry that they've been out in the Florida sun too long. That hairy, new "officer" is a two-and-a-half-year old German Shepherd dog named Toby.

Patrol duty, traffic duty, looking for lost children, and sweeping areas to be secured are only a few of the jobs to be given to the versatile Wackenhut guard.

Toby has just been hired by Wackenhut Services, KSC's security contracter, to work with his owner and trainer, Sgt. William M. Norris. Norris joined Wackenhut last year after retiring from the Air Force where his last assignment was Kennel Master at Patrick AFB.

Toby has been in training for his new job for about a year and a half. Sgt. Norris started him on standard obedience lessons when he was 11 months old, and added new subjects as the dog matured. Now fully trained, Toby practices 3 or 4 hours a week to maintain proficiency.

Tracking people both forwards and backwards is one of Toby's specialties. If the KSC patrol was to find a boat on the KSC beach, for instance, Toby could track its crew to wherever they had wandered. If, on the other hand, someone was found on the Center without permission, Toby could trace his footsteps back to where he entered the reservation.

At the Visitor Center or tour bus stop, Toby might be used for tracking a lost child. When helping clear the pad before a launch or building prior to a test, Toby will immediately alert his fellow officers to someone who might have missed hearing a warning horn. And Toby doesn't have to stumble across someone to find them. He can pick up a scent at 300 yards.

-more-

Wherever Toby is assigned, he is sure to command respect. "On traffic duty, for example," Norris says, "even the most belligerent people say 'sir' when they see a patrol dog. And you'd be surprised at the sobering effect a dog can have on someone who has had too much to drink."

Toby is trained to attack and hold. "It's a very humane way to stop someone," Norris says. Instead of relying on fear of a weapon, Toby can quickly run a person down. If they're armed, Toby will disarm them. If they are not armed, Toby will hold them gently until told to let go. "Toby starts off holding someone with just enough force to get their attention. If they struggle or try to escape, Toby is capable of jaw pressures up to 750 pounds per square inch," Norris says. "The more they struggle, the harder the pressure will get."

One of the features of Toby's training by Norris is the recall capability. Toby can be ordered to stop an individual and hold him and then be called back, if for instance, someone should wander in between the dog and the attackee.

Drugs and weapons are also in Toby's repertoire. Although not a primary function, Toby can sniff out the presence of most of the major illegal drugs such as marijuana, heroin, barbiturates and amphetamines.

When an undercover policewoman stopped by his home recently, Toby insisted on sitting at attention by her purse. Norris didn't notice at first, but then realized what the problem was and asked if she had a weapon with her. "Yes, it's in my purse," she said.

"Toby is trained to be much more subtle than most dogs," Norris says. "If he detects something, he gives a silent signal rather than whining, scratching or biting."

Norris frequently uses Toby for demonstrations to other police departments on the value of patrol dogs and to assist with appropriate cases.

Asked where a dog like Toby comes from, Norris laughs. "A friend of mine gave him to me," he explained, "because he liked to swim too well." His former owners lived on a boat and didn't like the idea of having a dog who continually jumped overboard.

With the hiring of Toby, the entire Norris family is now involved with law enforcement. Norris' wife, Beverly, is a sergeant in the Security Police and stationed at Patrick AFB. The couple met in the service, and the only problem Norris has noted is phone calls. Callers frequently are confused when asked, "Which Sergeant Norris?"

# # #

NASA News

IF.5 #17

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Mark Hess
305 867-2468

For Release:

September 3, 1980

RELEASE NO. KSC 156-80

## IMPROVED WEATHER SATELLITE SET FOR SEPTEMBER 9 LAUNCH

KENNEDY SPACE CENTER, Fla.--A prelaunch news conference on Geostationary Operational Environmental Satellite (GOES)-D, the first in a series of improved weather observers for the National Oceanic and Atmospheric Administration, will be held at 11 a.m. on Monday, September 8, in the E&O Building Conference Room at Cape Canaveral Air Force Station.

GOES-D will replace the weather satellite, GOES-East, that tracked Hurricane Allen's recent assault on the Texas coastline. GOES-D is scheduled to be launched atop NASA's workhorse Delta rocket on September 9 from Complex 17.

The launch opportunity for that date extends from 6:27 to 6:58 p.m. EDT.

GOES-D will be placed in geosynchronous orbit 22,250 miles above the equator at 75 degrees west longitude, or over the nation of Colombia in South America. GOES satellites are owned and operated by the National Oceanic and Atmospheric Administration.

To attend the prelaunch conference, news media representatives with permanent badges may proceed directly to the E&O Building. Others will be provided transportation from the Public Information Office, Room 1207, in the KSC Headquarters Building, leaving at 10:30 a.m.

On launch day, badged news media representatives may proceed directly to Press Site 1. Others will be badged at the Cape Canaveral Air Force Station Pass and Identification Building on Florida Route 401 near the Cape's south gate beginning at 5 p.m. Press representatives should plan on clearing the gate no later than 5:45 p.m.

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The prelaunch news conference and launch commentary, from about T-1 hour before launch until approximately 30 minutes after liftoff, will be carried on the V-2 circuit. To obtain access to this audio circuit, dial the KSC Operator at (305) 867-7110 and ask to be plugged into the V-2 circuit.

# # #

NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

IF,5 #17

Dick Young
305 867-2468

For Release

September 5, 1980

RELEASE NO. KSC 157-80

NOTICE TO EDITORS/NEWS DIRECTORS:

SPACE SHUTTLE BRIEFING SCHEDULED AT
NASA HEADQUARTERS SEPTEMBER 10

KENNEDY SPACE CENTER, Fla.--The first of a series of comprehensive briefings for the news media on the development and use of the nation's Space Transportation System will be held at NASA Headquarters in Washington, D. C. on Wednesday, September 10, at 11 a.m.

The subject of this first briefing will be "Technological Innovation in the Design and Development of the Space Shuttle."

Making the presentation will be Dr. Robert Frosch, NASA Administrator, and John Yardley, NASA's Associate Administrator for Space Transportation Systems.

Dr. Frosch will present an overview of the technological innovation required in order to design the nation's first generation of reusable space vehicles.

Yardley will review the status of the Space Shuttle development program in general, discuss the current status of significant technological requirements, and review the schedule NASA must meet in order to achieve the planned launch date for the Columbia's first flight in March, 1981.

A question and answer period will follow the presentation.

A two-way audio circuit will be in operation between the KSC News Center and NASA Headquarters to permit local media representatives to monitor the briefing and participate in the question and answer session.

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Media representatives without permanent credentials should contact this office at Area Code 305-867-2468 to arrange clearance to the News Center located in Room 1207 of the KSC Headquarters Building.

News media representatives who wish to monitor the briefing without coming to the KSC News Center may call the KSC Operator at Area Code 305-867-7110 and ask to be plugged into the V-2 Circuit.

Subsequent briefings will be held at two to three week intervals at the most appropriate location among the various NASA centers involved in the development of the Space Transportation System.

The briefing series will continue through the initial flight testing of Columbia, the first Space Shuttle in the fleet of near-Earth-orbiting vehicles the United States will fly to and from space in the 1980s.

# # #

NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

IF.5 #17

For Release:

Karl Kristofferson
305 867-4444

September 4, 1980

RELEASE NO: KSC 158-80

NOTICE TO EDITORS/NEWS DIRECTORS

ASTRONAUT VISIT TO HIGHLIGHT MARION COUNTY "SPACE-TACULAR"

KENNEDY SPACE CENTER, Fla.--Citizens of Marion County will have an opportunity to rub shoulders with an astronaut and get a first-hand look at how space technology is benefiting their daily lives when "SPACE-tacular" debuts September 15, in Ocala, Florida.

The three-week-long education and community involvement program is sponsored jointly by NASA's Kennedy Space Center and the Marion County School System.

A "SPACE-tacular" highlight will be a visit to the community by Astronaut Thomas Mattingly, command module pilot for the Apollo 16 mission to the moon. Mattingly will be officially welcomed by Ocala Mayor Wayne Rubinas at the program's opening ceremony, to be held at 1 p.m., Monday, September 15, at The Cascades Shopping Mall.

Following the opening ceremonies, a regional news conference with Mattingly will be held at the Central Florida Community College Auditorium in Ocala. The 2 p.m. news conference will be moderated by Bill Mansfield, well-known Ocala radio personality.

Mattingly will be the guest speaker at a 7 p.m., Monday, "Evening with the Astronaut" banquet, at the Ramada Inn, Ocala. The banquet is sponsored by the Ocala Star-Banner and is open to the public. Reservations can be made through the Ocala Star Banner.

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Among Mattingly's other appearances are a Tuesday morning (September 16) get-together at Ocala's Forest High School with students, teachers and principals from area schools, and a Tuesday afternoon program at the Ocala Regional Library.

"SPACE-tacular" is intended to be an educational experience and a means of involving and acquainting the entire community with the country's far-ranging aeronautical and space programs. It will provide aerospace science lectures and demonstrations to public and private schools and civic organizations in the county. Guest speakers from NASA will address professional and technical groups such as county medical associations, hospital staffs and amateur radio clubs.

In addition, "SPACE-tacular" will feature special events, plus a number of NASA exhibits on space benefits, planetary exploration, astronomy, and weather, communications and satellite remote sensing applications. Among the exhibits, which will be displayed at The Cascades Shopping Mall, September 15-29, will be a moon rock, a lunar roving vehicle like the one used by Apollo astronauts on the moon, a space suit and a scale model of the Space Shuttle -- the nation's newest manned spaceship.

Although NASA will furnish exhibits, speakers and technical guidance, the program is managed and conducted voluntarily by members of the local communities.

Leon Rogers, Superintendent of Schools for Marion County, is the honorary chairman for "SPACE-tacular." The program's central coordinator is Jerye Kristofferson, agent for Life & Casualty Insurance Co.. Coordinating school activities is Wiley Kerlin of the Marion County School System.

June Denson, marketing director for The Cascades Shopping Mall, serves as chairperson for the program's Steering Committee, which has overall responsibility for planning and scheduling of events. Assisting Denson on the committee are: Wayne Rubinas, Mayor of Ocala; Gordon Skipper, president of the Ocala-Marion County Chamber of Commerce and executive vice-president, Barnett Banks; Alan Fish, executive vice-president of the Chamber; Jim Reinsch, general manager, Cox Cable Television; David Cook, managing editor, Ocala Star-Banner; Stan Bustetter, manager, Ocala Regional Library; Bill Mansfield, general manager, WTMC Radio; Lennie Bendel, Assets Investigations and Discovery, Inc.; and Zita Haldin, Epsilon Sigma Alpha, Ocala.

NASA program manager is Ray Corey, chief of the Education and Awareness Branch of Public Affairs, Kennedy Space Center. Karl Kristofferson, deputy chief of the branch, serves as program coordinator. Bill Lockyer of the same office is the NASA exhibits coordinator.

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IF.5 #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Mark Hess
305 867-2468

For Release:

September 16, 1980

RELEASE NO. KSC 161-80

## ORLANDO FIRM WINS BID TO SUPPLY SHUTTLE PROPELLANT LINES

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded a $1,214,005 contract to Fluid Scientific, Inc., Orlando, Fla., to supply lines that will carry Space Shuttle propellants.

The Orlando small business firm will provide vacuum-jacketed lines capable of carrying the supercold liquid oxygen and liquid hydrogen propellants burned by the Space Shuttle orbiter's three main engines.

Propellants are fed to the main engines from the 154-foot long external tank that is attached to the belly of the delta-winged orbiter vehicle. Two solid rocket boosters, located on opposite sides of the external tank, fire simultaneously with the orbiter's main engines at liftoff, producing a total of 7 million pounds of thrust to get the Shuttle off the ground.

One set of propellant lines will be used at KSC in the twin Tail Service Masts located on the second Mobile Launcher Platform being modified for use in the Shuttle program. One and one-half million pounds of liquid propellant are loaded into the external tank during the Shuttle countdown through these structures, located on the deck of the Shuttle's transportable launch base.

Other sets will be used at Space Shuttle launch facilities at Vandenberg Air Force Base, California. One such set will be used at VAFB's Space Shuttle launch pad as part of the vent system that carries away excess hydrogen released from the external tank.

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Other companies that bid on the contract were: Flexible Metal Hose, Costa Mesa, Calif.; Metal Bellows Corp., Chatsworth, Calif.; Beech Aircraft Corp., Boulder, Colorado; and Speciality Maintenance & Construction, Inc., Lakeland, Florida.

Work under the fixed price contract will be performed in Orlando. The contract's period of performance extends from September 15 through January 1, 1982.

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IF.5 #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Leslie Vock
305 867-2468

For Release:

September 15, 1980

RELEASE NO. KSC 162-80

## SBA AWARDS CONSTRUCTION CONTRACT TO MERRITT ISLAND FIRM ON BEHALF OF NASA

KENNEDY SPACE CENTER, Fla.--The U.S. Small Business Administration has awarded a $84,400 contract to Santa Cruz Construction, Inc., Merritt Island, Fla., on behalf of NASA's John F. Kennedy Space Center for construction of a tire and front end shop at KSC's Automotive Maintenance Facility.

Work on the contract is to be done in 180 days and will involve building a tire and front end shop, a 40 by 60 foot metal building on a concrete slab. According to specifications, the Santa Cruz company will also provide compressed air, potable water, fire protection and electrical power facilities in the building.

The contract award is an SBA set-aside for small business concerns owned and controlled by socially and economically disadvantaged persons.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin flights in Earth orbit in 1981.

# # #

IF.5 #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

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Rusty Dorr
305 867-2468

For Release:

September 18, 1980

RELEASE NO. KSC 164-80

## NASA AWARDS RESEARCH GRANT TO ATLANTA UNIVERSITY CENTER

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded a $55,676 grant to the Atlanta University Center, Atlanta, Georgia, to conduct research and prepare an atlas on fractures in materials used as metallic substitutes.

Under the one-year grant, the minority owned University will examine fractures which occur to polymeric materials. These can be plastic or metal alloys used as a substitute for metallic parts.

Polymeric materials are commonly used as cages in ball bearings, in typewriters, automobile grills and in other engineering applications as a substitute for metal parts subjected to many environments.

Results from the study will be assembled into a reference document which is expected to expand the basic understanding of why these polymeric materials fail. The atlas will be used to compare and identify fractures in polymeric materials and aid in identifying the failure mode.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to being manned test flights in early 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

# # #

IF.5 #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

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Leslie Vock
305 867-2468

For Release:

September 18, 1980

RELEASE NO. KSC 165-80

## TITUSVILLE FIRM TO PREPARE SATURN 1B FOR VISITORS CENTER DISPLAY

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded a contract to the New World Construction Co. of Titusville, Fla., to prepare a Saturn 1B/Apollo for display at its Visitors Center.

The Saturn 1B was on display at a space exposition in Japan during 1978-1979 and all costs for transportation, refurbishment and assembly are being paid by the Japanese government.

Under the $186,625 contract, the Saturn 1B/Apollo components will be refurbished at their present location in the turn basin parking lot south of the Vehicle Assembly Building and then transported to the Visitors Center for assembly.

Work under the fixed price contract is to be completed within 120 days. The contract is one set aside for award to a small business firm in a surplus labor area.

The Spacecraft Lunar Module Adapter, Service Module and Command Module were part of a flight verification vehicle used from 1965 to 1968 at Complex 34, the Operations and Checkout Building and the VAB for fit checks, training and compatability tests. The S-1B booster and S-IVB second stage are backup flight hardware.

The Saturn 1B/Apollo space vehicle was flown on five manned missions - Apollo 7, the Skylab 2, 3 and 4 flights which carried three-man astronaut crews to and from the Skylab orbiting space station, and the Apollo Soyuz Test Project, a joint project with the Soviet Union.

# # #

IF.5 #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

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Mark Hess
305 867-2468

For Release:

September 29, 1980

RELEASE NO. KSC 171-80

NOTICE TO EDITORS/NEWS DIRECTORS

## SATELLITE BUSINESS SYSTEM SHOWING FOR PRESS SCHEDULED OCTOBER 2

KENNEDY SPACE CENTER, Fla.--A showing of the Satellite Business System spacecraft will be held for the press at 10 a.m., Thursday, October 2.

SBS-A is the first of three satellites to be launched by NASA for Satellite Business Systems. The satellite network will provide high-capacity , all-digital communications to a variety of large organizations in the United States.

The spacecraft showing will be held in Hangar AM on Cape Canaveral Air Force Station and project officials will be on hand to discuss the satellite and its mission.

News media representatives who wish to cover this event should be at the KSC News Center in Room 1207 of the Headquarters Building no later than 9:45 a.m. Transportation will be provided to and from Hangar AM.

Members of the press without permanent badges should contact the News Center at 867-2468 in order that we may coordinate badge pickup at the Pass and Identification Building on the NASA Causeway just off U. S. Route 1, two miles south of Titusville.

# # #

IF.5 #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Rusty Dorr
305 867-2468

For Release:

October 2, 1980

RELEASE NO. KSC 174-80

## FAIRVIEW HEIGHTS FIRM AWARDED SPACEPORT CONTRACT FOR CRAWLER REPAIR

KENNEDY SPACE CENTER, Fla.--NASA's John F. Kennedy Space Center has awarded a $38,000 contract to C&M Services of Fairview Heights, Ill., to perform maintenance work on KSC's two massive crawler-transporters.

The two-story, six million pound behemoths are the largest tracked vehicles in the world. They were used during the Apollo program to move the Saturn rockets from the Vehicle Assembly Building to the launch pad, three and one-half miles away.

Now, the crawlers will be used to carry the Space Shuttle from the same assembly building to the same launch pad. With a platform the size of a baseball infield, each transporter will carry its 11 million pound load to the launch pad at a maximum speed of one mile per hour.

Under the firm, fixed price contract, C&M Services will repair the treadbelt shoes on which the crawler moves. The steel shoes measure seven feet in length, two feet wide and 16 inches wide. They weigh one ton apiece. C&M, a small business firm, will perform line boring and installation of bushings in 38 of the treadbelt shoes.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flight in early 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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IF.5 #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Roland Raab
305 777-2183

For Release:
October 8, 1980

RELEASE NO. KSC 176-80

## IBM WINS MODIFICATION TO SPACE CENTER CONTRACT

KENNEDY SPACE CENTER, Fla. -- International Business Machine Corporation, with offices at 7900 N. Astronaut Blvd., Cape Canaveral, has won a modification to an existing contract to provide project management and integration support for Space Shuttle payload facilities at the John F. Kennedy Space Center. The contract modification has a value of $12,925,230.

Under the contract, IBM will perform design, development, integration and other services for Cargo Integration Test Equipment (CITE) at KSC. The services involve receiving and assembling CITE gear for Space Shuttle payloads. The work will be done at horizontal and vertical payload processing facilities at KSC and at vertical processing facilities at Cape Canaveral Air Force Station.

The facilities simulate the electrical and electronic functions of the Orbiter. Much of IBM's work will be to insure that the many payloads are electrically and electronically compatible with the Orbiter in order to prevent damage to either.

The cost plus award fee contract modification brings the value of the existing contract to a total of $18,056,117. Further options could add an additional $5,026,223 to the total value over the life of the contract.

The period of contract performance extends to October 1, 1982 under this modification, and various other options may extend the work through November 1, 1984.

The Kennedy Space Center is the primary launch and recovery site for the Space Shuttle, scheduled to being manned test flights in 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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IF.5 #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
AC 305 867-2468

Ann Skinner
305 784-3103

For Release:

October 8, 1980

RELEASE NO. KSC 177-80

## SPACEPORT AWARDS $6.6 MILLION CONTRACT, LARGEST EVER TO SMALL BUSINESS

KENNEDY SPACE CENTER, Fla.-- NASA's John F. Kennedy Space Center has awarded a contract worth $6,689,666 to W&J Construction Corp, Cocoa, for work on Pad B of Launch Complex 39. It is the largest construction contract ever let by KSC to a small business, according to a KSC procurement officer.

The work to be done by W&J Construction, which has had previous KSC contracts, includes installing the long-run piping and cable to pump and monitor fuels, coolant, gaseous helium and nitrogen, compressed air and hydraulic fluids from their storage areas on the pad to the Fixed Service Structure and the Rotating Service Structure. Connections to the Space Shuttle are made from the two service towers. The contract is a fixed-price agreement with the work expected to be finished in 20 months.

The first Space Shuttle is to be launched next year from Pad A of Launch Complex 39. Pad B, basically a duplicate of Pad A, is expected to be completed in 1982 and will be used when the Shuttle begins regular operations. Complex 39 was the site of the launches of NASA's missions to the moon and is being modified for Shuttle flights.

The Kennedy Space Center is the primary launch and recovery site of the reusable Space Shuttle, a revolutionary transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense users.

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# NASA News

National Aeronautics and
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For Release:

Immediate

NOTICE TO EDITORS/NEWS DIRECTORS
KSC #184-80

## FLTSATCOM-D NEWS CONFERENCE SCHEDULED OCTOBER 29

KENNEDY SPACE CENTER, Fla.-- A news conference on the FLTSATCOM-D mission scheduled for launch on Thursday, October 30, will be held on October 29.

FLTSATCOM-D, fourth in a series of military communications satellites being orbited for the Department of Defense by NASA, will be launched aboard an Atlas Centaur rocket from Complex 36, Cape Canaveral Air Force Station, during a window extending from 10:17 to 11:50 P.M. EST.

The prelaunch news briefing will be held in the Conference Room of the E&O Building at Cape Canaveral Air Force Station at noon on Wednesday, October 29. Launch and mission operations will be outlined by project officials.

To attend the prelaunch conference, news media representatives with permanent badges may proceed directly to the E&O Building. Others will be provided transportation from the Public Information Office, Room 1207, KSC Headquarters Building, leaving at 11:30 A.M.

On launch day, badged news media representatives may proceed directly to Press Site 1 on Cape Canaveral Air Force Station. Others will be badged at the Cape Canaveral Air Force Station Pass and Identification Building on Florida Route 401 near the Cape's South gate beginning at 8:45 p.m. Press representatives without permanent badges should plan on clearing the gate no later than 9:45 P.M.

The prelaunch news conference and launch commentary beginning approximately one hour before launch and continuing through spacecraft separation will be carried on the V-2 Circuit. To obtain access to this audio circuit, dial the KSC Operator at Area Code 305-867-7110 and ask to be plugged into the V-2 Circuit.

# # #

For call out purposes (or incase you talk to any news guys today or ~~xxxxx~~ tomorrow).

The UTC Liberty, the first of the twin SRB recovery ~~boats~~ ships to be delivered to KSC, will arrive Wednesday, Oct. 22 at Hangar AF about noon. The ~~boat~~ ship is scheduled to leave Jacksonville around 11-11:30 a.m. Tuesday and spend the night ~~xxxxxxxxx~~ at sea. ~~xxxxxxxx~~ It's only a 12 hour ride from J'Ville. We've set up a dog and pony with the boat for Wednesday. Tell the press to come to our office, not later than 11:30 and we'll provide the transportation. Jack Gerding ~~xxx~~ from NASA and Anker Rassmussen USBI's Marine Operations Manager will be on hand to ~~xxxx~~ answer questions and take the press on a quick and dirty tour of the ~~xxxx~~ ship.

IF.5 #17

# NASA News

National Aeronautics and
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**John F. Kennedy Space Center**
Kennedy Space Center, Florida 32899
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For Release:

RELEASE NO. KSC 186-80(Call out) October 22, 1980

SHUTTLE BRIEFING ANNOUNCEMENT:

The latest in a series of NASA briefings on the Space Shuttle will be held at the Johnson Space Center, Houston, Texas, on Thursday, October 23, at 2 P.M. EST.

The subject of the briefing will be "The Space Shuttle Orbiter and Its Systems".

Panelists will be Aaron Cohen, Manager of the JSC Orbiter Project Office, and Thomas Moser, Chief, Structural Design Section, Engineering and Development Directorate, JSC.

News media representatives may monitor the briefing in the KSC News Center in Room 1207 of the Headquarters Building or on the V-2 Audio Circuit. Those wishing to monitor the briefing by telephone should call the KSC Operator at 867-7110 and ask to be plugged into the V-2 circuit.

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NASA News

National Aeronautics and
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**John F. Kennedy Space Center**
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IF.5 #17

RELEASE NO. KSC 187-80(Call Out)

For Release:
October 22, 1980

FORTUNE 500 TOUR

Nearly 60 top executives from some of the largest corporations in America will visit the Kennedy Space Center tomorrow. The visit is a part of an ongoing program to expose industry leaders from outside the aerospace program to the advances in technology being made in the space program along with an assessment as to how they might be used in other industries. Co-sponsored by the American Institute of Aeronautics and Astronautics (AIAA) and NASA, executive briefings have been held over a period of several years at various other NASA centers.

Executives from companies, including Exxon, Control Data, Deere and Company, Johns Manville and Eaton Corporations, will spend a full day seeing KSC facilities and hearing talks. Subjects will include handling large volumes of cryogenic fluids, failure analysis, corrosion control, lightning detection and protection, and remote instrumentation.

The AIAA-NASA program is designed to help speed the transfer of technology being developed for the space program to companies which can use it immediately for consumer products or services.

# # # #

NASA News

National Aeronautics and
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**John F. Kennedy Space Center**
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IF.5 #17

CALL OUT

For Release:

October 27, 1980

KSC RELEASE NO. C188-80 (CALL OUT)

The prime and backup crews for the first space shuttle mission will be flying Orbiter final landing approaches in the Gulfstream II Shuttle Training Aircraft Tuesday through Friday of this week.

Making the practice landings on KSC's shuttle landing facility will be prime crew astronauts John Young and Bob Crippen and back-up crewmen Joe Engle and Richard Truly.

Prime crew pilot Bob Crippen will be flying the steep descent approaches on Tuesday morning and will meet with the press at the conclusion of the day's test flights.

Media representatives who wish to cover the landing tests should be at the KSC News Center at 7:30 a.m. on Tuesday morning to join a convoy for the North end of the landing facility.

At approximately 8:45 a.m., the press group will be moved out for the trip to the NASA hangar at Patrick AFB where astronaut Crippen has agreed to meet with the press to discuss the landing tests.

The Tuesday flight operation is the only one of the four this week in which press participation is planned.

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IRS #17

# NASA News

National Aeronautics and
Space Administration

**John F. Kennedy Space Center**
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For Release:

October 27, 1980

KSC RELEASE NO. C189-80 (CALL OUT)

NEW ASTRONAUT CANDIDATES (CALL OUT)

NASA's newest group of astronaut candidates for the Space Shuttle program will begin a two-day familiarization and orientation tour of the Kennedy Space Center and Cape Canaveral Air Force Station today. The group of 19, selected by NASA on July 7 this year, will visit Cape Canaveral AFS today for a series of briefings on the Air Force's Titan III missile program and a look at Titan processing and launch facilities. They will also visit NASA's facilities on the Cape - Complexes 17 and 36 - where the expendable Delta and Atlas Centaur rockets are checked out and launched.

Tuesday, the candidates will tour Space Shuttle launch and processing facilities at the Kennedy Space Center, including the Orbiter Processing Facility where Columbia is being readied for its maiden voyage, the Launch Control center for a demonstration of the sophisticated Launch Processing System and Complex 39A, site of the first Space Shuttle launch.

A photo opportunity and interview session with an Astronaut spokesman from the group will be held at Pad A about 4 p.m. An earlier photo session is also planned at the Crawler-Transporter park site. Newsmen wishing to cover Tuesday's activities should be at the News Room no later than 2 p.m.

NASA selected the 19 candidates from 3465 applicants. The group includes two women, a black pilot candidate and an Hispanic mission specialist candidate. William F. Fisher, the husband of Anna Fisher who was selected for the astronaut candidate program in 1978, is also among those in this new group of candidates. After a year of training and evaluation at the Johnson Space Center in Houston, the successful candidates will become astronauts and enter the Shuttle training program leading to selection for Shuttle flight crews.

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A PRESS BRIEFING ON THE VOYAGER 1 FLYBY OF SATURN IN NOVEMBER WILL BE HELD AT NASA HEADQUARTERS AT 10 A.M. EST ON TUESDAY, OCTOBER 28. NEWS MEDIA REPRESENTATIVES MAY MONITOR THE BRIEFING AT THE KSC NEWS CENTER IN ROOM 1207 OF THE HEADQUARTERS BUILD ING OR ON THE V-2 CIRCUIT.

THOSE WHO WISH TO LISTEN IN ON THE V-2 CIRCUIT SHOULD CALL THE KSC OPERATOR AT 867-7110 AND ASK TO BE CONNECTED WITH THE V-2 CIRCUIT.

THE BRIEFERS WILL BE ANDREW STOFAN, ACTING ASSOCIATE ADMINISTRATOR FOR SPACE SCIENCE: ANGELO GUASTAFERRO, DIRECTOR OF PLANETARY PROGRAMS: DR. EDWARD STONE, VOYAGER PROJECT SCIENTIST, CAL TECH: RAY HEACOCK, VOYAGER PROJECT MANAGER, JET PROPULSION LABORATORIES; and DR. BRADFORD SMITH, VOYAGER IMAGING TEAM, UNIVERSITY OF ARIZONA.

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# NASA News

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For Release
Immediate

RELEASE NO. KSC 195-80

SBS LAUNCH RESCHEDULED FOR NOVEMBER 15

KENNEDY SPACE CENTER, FL. -- The launch of the first of a series of three spacecraft for Satellite Business Systems has been rescheduled for November 15.

The new communications satellite, SBS-A, will be launched by KSC aboard Delta 153 from Complex 17 at Cape Canaveral Air Force Station. The launch window is from 5:49 - 6:57 p.m., with two additional windows - 7:32 - 7:44 p.m., and 8:21 - 8:30 p.m. - available that evening.

The new satellite, to be designated SBS-1 in orbit, is designed to transmit high quality voice, data and television communications directly between commercial business customers. All three satellites in the system will be identical.

NOTE FOR EDITORS/NEWS DIRECTORS:

A prelaunch news conference on the SBS-A mission will be held in the Conference Room of the E&O Building at Cape Canaveral Air Force Station at 11 a.m. on Friday, November 14.

Media representatives who plan to attend should be in the KSC News Center in Room 1207 of the Headquarters Building no later than 10:30 a.m. Transportation to and from the E&O Building will be provided.

On launch day, media representatives with permanent credentials may proceed directly to Press Site 1. Others will be badged at the Pass and Identification Building on Florida Route 401 near Gate 1, Cape Canaveral Air Force Station, beginning at 4:15 p.m. The badging operation will be closed at 5:15 p.m. and media representatives should plan to clear Gate 1 prior to that time.

Both the prelaunch conference and mission commentary will be carried on the V-2 circuit, which is accessible by calling the KSC Operator at 867-7110 and asking to be plugged into the V-2 circuit.

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# NASA News

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Immediate

RELEASE NO. KSC 197-80

## NEW SPACECRAFT PROPULSION SYSTEM TO DEBUT ON SBS LAUNCH

KENNEDY SPACE CENTER, FL.-- The launch of the Satellite Business System satellite on a Delta rocket will mark the debut of a new spacecraft propulsion system and the first test of what will be the upper stage for Delta-class payloads carried aboard the Space Shuttle.

The new solid-propellant rocket system is called the PAM, for Payload Assist Module. A modified version of the PAM designed to be carried in the orbiter's cargo bay will propel spacecraft deployed from the Shuttle to altitudes beyond its reach. When the new vehicle is used in a Shuttle mission, it is called the SSUS - Spinning Solid Upper Stage.

On a typical Delta mission involving placement of a satellite in a stationary orbit above the equator, the third and final stage is fired more than 20 minutes after liftoff to complete the injection of the spacecraft into an elliptical transfer orbit with a high point about 23,000 miles above the Earth.

To deliver a Shuttle-carried satellite of the same weight to the same orbit requires an upper stage similar to the Delta's third, or final, stage. This upper stage will push the spacecraft from the Shuttle's working altitude into the higher elliptical transfer orbit.

To provide an orderly transition from the Delta expendable booster to the reusable Space Shuttle for satellite operators with Delta-class payloads, McDonnell Douglas Astronautics Co. (MDAC) proposed the PAM/SSUS upper stage concept.

This system has the advantage of being adaptable to either Shuttle or Delta missions, a feature important to users with transition payloads - ones designed to ride either aboard the Shuttle or atop an expendable Delta booster. With this system, the user has a backup capability in case the Shuttle is not available.

More more

NASA made an agreement with MDAC to develop the system on a commercial basis and provide it to users in this payload class.

Shortly after the agreement with MDAC to build the Delta-class PAM/SSUS system, (PAM-D or SSUS-D) NASA decided it needed a similar capability to support heavier satellites now launched on Atlas Centaur rockets. NASA picked MDAC to develop and provide a SSUS-A also on a commercial basis.

The SSUS-A (or PAM-A) will operate in a similar manner to the SSUS-D and be capable of putting 4,400 pounds into an elliptical transfer orbit. However, the SSUS-A will be used only for Shuttle-launched satellites. It is not designed for use with an expendable booster.

The PAM that will be used for the SBS mission is a larger, more powerful spin-stabilized solid rocket motor than the third stage on the Delta 3914 vehicle most recently used to launch the GOES-D satellite, and used on many other previous Delta flights.

In comparison to the solid-fueled third stage formerly used with the Delta rocket- the Thiokol-built TE 364-4 - the new PAM-D can put about 400 more pounds into the same orbit. The new PAM-D/ SSUS-D motor is also built by Thiokol and is called the STAR-48.

Both the TE 364-4 and the STAR-48 motors develop about the same amount of thrust - approximately 15,000 pounds. However, the STAR-48 will burn nearly twice as long - 85 seconds.

Delta-PAM's will be utilized on NASA's two-stage Delta 3910 and 3920 vehicles. Users will purchase the PAM directly from MDAC as part of the payload.

Because this system is compatible with either the Shuttle or the expendable Delta booster, many of the system elements are similar.

The major difference between an upper stage for Delta and one used in a Shuttle is the reusable Airborne Support Equipment provided to hold the stage and payload in the Shuttle's cargo bay.

This cradle-like structure contains a spin system to provide the stabilizing rotation, a separation system to release and deploy the stage and spacecraft and the necessary avionics to control, monitor and power the system.

McDonnell Douglas is also developing an uprated version of the PAM/SSUS system to support heavier satellites still in the Delta class.

By extending the PAM's solid rocket motor case so that several hundred extra pounds of propellant can be loaded into the motor, MDAC can increase the payload-boost capability from 2,320 pounds to 2,750 pounds on Shuttle missions; from 2,320 pounds to 2,450 pounds on Delta 3910 launches; and up to 2,800 pounds with the advanced Delta 3920 model.

The first use of the new upper stages in the Shuttle is currently scheduled for November, 1982. SSUS-D's will be used to boost Satellite Business System and Canadian TELESAT satellites into geosynchronous orbits, while a SSUS-A will be used on an INTELSAT V communications satellite.

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# NASA News

National Aeronautics and
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For Release:
November 13, 1980

RELEASE NO. KSC 198-80

## IVEY'S STEEL WINS $1.3 MILLION CONSTRUCTION CONTRACT

KENNEDY SPACE CENTER, FLA.--Ivey's Steel Erectors, Inc. of Merritt Island Florida, has won a $1,371,144 construction contract from NASA's John F. Kennedy Space Center, to build a Life Sciences Support Facility.

This facility, to be constructed within an existing building, will support non-human life sciences flight experiments to be flown on the Space Shuttle.

Up to 20 Principal Investigators will be able to work in the building, and as many as 30 primates and 500 rodents can be housed there. Holding and preparation areas for plants, fish and amphibians, cells and tissues will also be available.

NASA will fly several Shuttle missions dedicated to life sciences investigations containing between 20 and 45 experiments. This facility will provide the laboratories, shops, data managements, storage and synchronous ground control areas needed to support those missions.

Ivey's Steel will construct the Life Sciences Support Facility within Hangar L, an existing facility located on Cape Canaveral Air Force Station. Work under the fixed-price contract, made to a small business firm, is to be completed within one year.

Other firms that also bid on the project were: Bruce-Anderson Co., Bozeman, Montana: Rheinhold Construction, Inc., and W&J Construction of Cocoa; Sauer Mechanical, Inc., Jacksonville, and Holloway Corp., and David Boland, Inc., both of Titusville.

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# NASA News

National Aeronautics and
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For Release: Immediate

RELEASE NO. KSC 199-80

## KSC EMPLOYEES OPEN HEARTS, POCKETBOOKS, FOR CHARITIES

KENNEDY SPACE CENTER, FL -- KSC employees have achieved an all time high in donations to this year's Combined Federal Campaign (CFC). The total amount of donations this year exceeded $121,800.

This total represents more than 111 percent of KSC's goal and is also about $3,000 higher than any previous amount contributed. The Combined Federal Campaign is a once a year charitable drive by Federal employees for the local United Way, National Health Agencies and International Service Agencies. United Way of Brevard will receive approximately $97,900 of the KSC total.

More than 2,000 people made contributions for a 91 percent participation rate. New rules this year allowed contributors to designate funds for specific agencies over and above the normal distribution of undesignated funds. The majority of funds, both designated and undesignated will be used in the local area.

Also for the first time this year, four local agencies, not members of United Way, participated but recieved designated funds only. Those agencies -- Crosswinds, Hacienda Girls' Ranch Inc., H.O.W. House, Inc., and the Leukemia Society of America, Inc. -- will receive more than $3,000 from the KSC collection.

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IF.5 #17

# NASA News

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For Release:

Immediate

RELEASE NO. KSC 200-80

## ASTRONAUTS PRACTICE LANDINGS AT KSC

KENNEDY SPACE CENTER, FL.-- No, they're not dive bombing cars, scaring birds or "buzzing". Those jets that swoop down low over the southern access road to Playalinda Beach (State Road 402) are part of NASA's training program for Space Shuttle astronaut pilots.

For the past several weeks, Space Shuttle flight crews have been flying practice landing approaches to the Shuttle Landing Facility runway, located less than a mile south of the road. The flights, which take place in early morning and late afternoon, follow both the ground track and descent angles that astronauts will eventually fly to land the Space Shuttle at KSC.

Using one of two specially modified aircraft, the astronauts begin their landing approach from the northeast at altitudes of up to 40,000 feet. The descent path is about seven times steeper than that of a commercial airliner and is aimed at a point a bit more than a mile from the end of the runway.

The pilot aims the aircraft at the ground, then gradually raises the nose of the craft as it passes about two thousand feet of altitude. From there on, the flight path more closely resembles that of a regular aircraft until touchdown.

It is just after raising the nose, and while the glide angle is becoming shallower that the training aircraft passes over SR 402. At that point, it is at about 250 feet. What makes the aircraft seem lower to some is the sound of its engines.

In order to simulate the powerless condition of the Space Shuttle more closely, one type of training aircraft has been modified so that the engines provide reverse thrust while still airborne. Doing so makes the engines sound much louder than under normal flight conditions.

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Such landing practice for the astronauts will continue periodically over the next few months, and may become a regular feature of astronaut training for future astronaut pilots.

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IF.5 #17

# NASA News

National Aeronautics and
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For Release:

Immediate

KSC RELEASE NO. 203-80

## COCOA FIRM WINS CONTRACT TO UPGRADE SPACEPORT'S HEATING FACILITIES

KENNEDY SPACE CENTER, FL. -- S & O Air Conditioning Co., Inc. of Cocoa, Florida, has won a $79,240 contract with the Kennedy Space Center for repairs and improvements to the Center's heating facilities.

Under the fixed-price contract, S & O Air Conditioning will install new piping for carrying fuel oil and hot water, and will remove an existing steel cooling tower from the Central Heating Facility and replace it with a new ceramic tower.

The contract is one set aside for award to a small business firm in a labor surplus area. Work under the contract is to be completed within a 120-day period.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flights in March, 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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# NASA News

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For Release:
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KSC RELEASE NO. 204-80

## INTELSAT V NEWS CONFERENCE SCHEDULED DECEMBER 3

KENNEDY SPACE CENTER, Fl. -- The launch of the first in a new series of communications satellites owned by the International Telecommunications Organization is scheduled aboard an Atlas Centaur rocket no earlier than Thursday, December 4.

The Intelsat V spacecraft will be launched during a window extending from 6:22 to 6:30 p.m. EST. Two other opportunities exist for that date - from 7:09 to 7:29 p.m. and from 8:10 to 8:29 p.m. Launch will be conducted from Complex 36, Cape Canaveral Air Force Station by KSC's Deployable Payloads Operations Directorate.

A pre-launch news conference on the Intelsat V mission will be held in the conference room of the E&O Building at Cape Canaveral Air Force Station on Wednesday, December 3, at 11 a.m.

Media representatives who plan to attend should be in the KSC News Center in Room 1207 of the Headquarters Building no later than 10:30 a.m. Transportation to and from the E&O Building will be provided.

On launch day, media representatives with permanent credentials may proceed directly to Press Site 1. Others will be badged at the Pass and Identification Building on Florida Route 401 near Gate 1, Cape Canaveral Air Force Station, beginning at 4:45 p.m. The badging operation will be closed at 5:45 p.m. and media representatives should plan to clear Gate 1 prior to that time.

Both the prelaunch conference and mission commentary will be carried on the V-2 circuit, which is accessible by calling the KSC Operator at 867-7110 and asking to be plugged into the V-2 circuit.

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IF.5 #17

# NASA News

National Aeronautics and
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For Release:

Immediate

KSC NEWS RELEASE NO. 205-80

NOTICE TO EDITORS - NEWS DIRECTORS

FROSCH NEWS CONFERENCE AND FIRST DELIVERY OF SPACELAB MODEL SET FOR DECEMBER 5

KENNEDY SPACE CENTER, FL. -- NASA Administrator Robert A. Frosch, who is leaving NASA January 20 to take a job in private industry, will hold an informal press conference Friday, December 5, at the Kennedy Space Center. The conference will be held in the 4th Floor Conference Room in the KSC Headquarters Building.

Following a brief opening statement, Frosch will be available to answer questions. The news conference will be carried over the V-2 circuit, which newsmen can obtain by calling the KSC operator at 867-7110 and asking to be patched into the V-2 circuit. Newsmen who wish to participate in the conference should be at the KSC Newsroom, Room 1207 in the KSC Headquarters Building, no later than 9:45 a.m.

Also on that day, the first of three shipments containing the Spacelab Engineering Model, a full-scale mockup of the Spacelab 1 laboratory, will be delivered to KSC's Shuttle Landing Facility on a C 5A transport plane. Transportation to the Shuttle Landing Facility will be available immediately following Frosch's news conference.

Spacelab, a versatile orbiting laboratory that fits in the Space Shuttle Orbiter's cargo bay, will provide a fully furnished laboratory for scientists to conduct experiments in a shirtsleeve environment. The first Spacelab is scheduled to be launched on the 10th Space Shuttle flight. The Spacelab Engineering Model will be used to checkout the facilities and ground support equipment installed in the Operations and Checkout Building to process actual Spacelab components.

- more -

KSC 205-80

Other shipments containing Engineering Model hardware are scheduled to arrive December 8 and December 13.

Officials from KSC's Cargo Projects Office will be available at the Landing Facility for interviews.

# # # #

NASA News

National Aeronautics and
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For Release:

IMMEDIATE

KSC RELEASE NO. 206-80

# PREPARATIONS UNDERWAY FOR FIRST MAJOR SHUTTLE TEST

KENNEDY SPACE CENTER, FL. -- The orbiter Columbia has been mated with other Space Shuttle elements on a Mobile Launcher Platform in the Vehicle Assembly Building and preparations are underway for its first major test as a unified system - the Shuttle Interface Test.

The Columbia was moved the 300 yards from the Orbiter Processing Facility to the Vehicle Assembly Building on November 24 and mated with the external tank and solid rocket boosters assembled earlier on the mobile launcher platform.

The Shuttle Interface Test will run for more than two weeks and is designed to check out the mechanical and electrical connections between the various elements and the functioning of onboard flight systems.

This is the first flow of flight hardware through KSC's processing facilities. The Space Shuttle Orbiter Enterprise - which will not be flown in space - was used in a "pathfinder" flow through the facilities in 1979 but it lacked many of the systems essential for space flight which are aboard Columbia.

The SIT was originally scheduled to begin earlier this week but was delayed to begin no earlier than 1 a.m. EST Thursday, December 4. The delay is due to a number of minor problems, among them the failure of a jacking and locking device on one of the two tail service masts which provide umbilical links with the orbiter.

The device is used for final adjustments in connecting the tail service mast carrier plate to the orbiter. The failure occurred only on one of the two tail service masts (the oxygen side) and the remaining unit (on the hydrogen side) is being used to affect the final connections.

It is expected that the connections will be made in time to permit the beginning of the test on Thursday.

- more -

KSC NO. 206-80

The umbilicals on the tail service masts provide electrical, fluid and gas services to the orbiter during pre-flight processing and are automatically disconnected at liftoff.

The Columbia's systems received a thorough checkout during the Orbiter Integrated Test conducted in late 1979 and early 1980. During that test, the operations of systems on the external tank which carries propellants for the orbiter's main engines and the twin solid rocket boosters was simulated.

During the forthcoming test, the entire Space Shuttle system will be tested as a unit to determine its readiness for flight. The orbiter's main enginenozzles, elevons, rudder and speedbrake, and body flap will be moved as they would be in flight and the solid rocket booster nozzles will also be gimbaled.

During the latter part of the test, the prime and backup crews for the first Space Shuttle mission - Astronauts John Young and Bob Crippen, and Joe Engle and Richard Truly - will participate in a number of simulations of ascents to orbit, launch and first orbit abort, and a descent from orbit to a landing.

"We have a number of 'firsts' coming up on this test," commented William H. Shick, Chief of the Prelaunch Test Operations Branch.

"We'll have about 150 personnel in Firing Room 1, the first time we've had entire Space Shuttle firing room crew here at one time," Schick added.

"It will also be the first time that the astronauts have been in the orbiter's cabin while the vehicle is in a vertical position. This will permit them to get a feel of what they can and can't reach and make an assessment of crew comfort while waiting on the pad for launch," said Schick.

While preparations are underway in the Vehicle Assembly Building for the Shuttle Interface, the work of filling the 900,000 gallon liquid oxygen tank at Complex 39's Pad A is proceeding.

Nine tank truck loads of "lox" were delivered to Pad A on Monday and a delivery rate of 10 tank truck loads per day is expected to continue for the next two and a half weeks.

The validation of Pad A's hypergolic farm system has been completed and cleanup work is in process.

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# NASA News

National Aeronautics and
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For Release:
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KSC NEWS RELEASE NO. 208-80

## KENNEDY SPACE CENTER TOURS SHOW INCREASE FOR NOVEMBER

KENNEDY SPACE CENTER, Fla.--More than 67,000 visitors toured the nation's Spaceport in November as engineers and technicians here prepared for the first launch of the Space Shuttle and its crew in March, 1981.

Visitors taking guided bus tours totaled 67,568 for the month, .6 percent higher than the 67,139 bus patrons logged in November 1979. This was the third straight month that tour totals have been higher than for the comparable period last year.

The November bus tour figure pushed the cumulative total for the year to 1,156,207, or 2.8 percent below the 1,189,299 visitors for the first 11 months of 1979. During the first six months of this year attendance ran behind 1979 by 6.8 percent, but since June, except for one month, the number of visitors has surpassed the number last year.

The KSC Visitors Information Center will add a major new outdoor exhibit in mid-December with the installation of a Saturn 1B rocket.

Saturn IBs carried the Skylab and Apollo Soyuz Test Project astronauts into space in the mid-1970s.

The rocket on display is the one that was loaned for 18 months to the Space Science Exposition in Tokyo. In return the Exposition Association agreed to pay for its reinstallation, in a horizontal position, parallel to the entrance road at the Visitors Center.

Plexiglass windows in one side will show portions of the second stage and command module engines.

Another new exhibit highlights communications satellites and features a model of Intelsat V, launched in early December. The exhibit is on loan from Ford Aerospace and Communications Corporation, builder of INTELSAT V, the largest commercial communications satellite in both size and capacity.

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KSC NEWS RELEASE NO. 209-80

## KSC PLANE BUILDERS FOLLOWS TRAIL OF WRIGHT BROTHERS

KENNEDY SPACE CENTER, FL.-- It was 77 years ago this month that an odd looking contraption called the aeroplane opened the age of powered flight over the sand dunes of Kitty Hawk, N.C.

On December 17, 1903, two brothers from Dayton, Ohio, made aviation history with a flying machine that looked like it should be going the other way. Its tail was out in front of the pilot and its propellers were behind him.

Known as the canard configuration, their design faded rapidly from popularity as persistent problems with control sent most aircraft builders back to the drawing board to dream up plans which would establish the conventional designs familiar in our skies today.

Were the Wright brothers wrong?

Hardly, according to KSC's John Murphy and experimenters at NASA's Langley Research Center.

Using materials quite similar to those used in making a surfboard, Murphy has constructed two home-built planes incorporating the tail-first canard configuration.

He flew the latest of these non-stop from Merritt Island to Oshkosh, Wisconsin, for an air show late last summer, traveling 1,300 miles in 8½ hours on 41 gallons of fuel.

The planes not only fly, they fly with a greater degree of safety and fuel efficiency than the conventional aircraft which have dominated the skies since 1903, Murphy adds.

Wind tunnel tests at Langley on a scale model of Murphy's first plane have confirmed that the craft's design apparently improves fuel efficiency and safety.

-more-

"The Wright brothers weren't wrong," says Murphy. "They just didn't get all of the bugs worked out. Time and experience finally produced a workable situation."

He gives much of the credit to former Air Force engineer Burt Rutan, who conceived and marketed plans for a canard-style plane similar in size and power to conventional small aircraft like the Cessna.

Murphy, a civilian aviator since 1944, bought plans for the foam and fiberglass build-at-home plane from Rutan at an Oshkosh air show in 1976. It was flying over Brevard County six months after he began work.

Called the Vari-EZE, it quickly became one of the most popular home-built aircraft designs in America, he says.

In June, Murphy completed work on a second, improved design by Rutan.

A little more than a month later, he and a passenger climbed in and flew Long EZ 002 from Merritt Island to Wisconsin.

When they landed 8½ hours later, they had consumed 41 gallons of fuel and had 14 gallons left in the tank.

The safety advantage of the canard configuration, Murphy explains, is that it recovers rapidly from a stall - - when a plane's forward flight ceases because of a drop in air speed over the wing surfaces.

In a conventional plane, a stall may bring a dive of some distance before it's possible to level off and resume flying instead of falling. The problem is that you might meet the ground first.

With the horizontal tail out in front of the main wing, the horizontal tail stalls first, automatically causing the aircraft to pitch nose down and come out of the stall before the wing is affected. This results in only minimal altitude loss.

Murphy says the fuel efficiency of his plane not only results from the design -- which allows use of a shorter fuselage -- but from the light-weight composite materials used in its construction.

He built the major pieces of the plane in a garage at his Cape Canaveral home and assembled them in a hangar at the Merritt Island airport.

It's powered by a four-cylinder, 135-HP Lycoming engine that sounds like an ailing automobile during the taxi out to the runway. Once in the air though, the engine achieves a strong, healthy drone which reassures an apprehensive passenger.

The plane draws incredulous stares wherever he flies it, Murphy says. "Everywhere I go it draws a crowd," he said. The first question he always gets, he says, is "Which way is the front?"

Murphy joined KSC in 1964 to work on the Apollo project and currently is responsible for reliability, quality and safety policy and procedures under KSC's Design Engineering Directorate.

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KSC NEWS RELEASE NO. 210-80

CFC CONTRIBUTIONS UP, THOUGH FEDERAL EMPLOYMENT DOWN

KENNEDY SPACE CENTER, FL.-- Federal employees in Brevard County increased their contributions to the Combined Federal Campaign this fall by more than 6% over last year despite the fact that their number has dwindled from last year by about 1,000, Colonel Russell Rubeor, county chairman, announced today.

This year Federal employees gave $216,999, compared to $204,577 last year. The total, according to preliminary figures, was also 111% of the CFC goal of $195,000.

The Combined Federal Campaign is a once-a-year charitable drive for the United Way of Brevard County, National Health Agencies and International Service Agencies. Also included this year were four local agencies, which received only money specifically directed to them.

A new Federal policy this year allowed contributors to designate funds to be credited to specific agencies over and above the normal distribution of undesignated funds, according to a formula agreed on by participating agencies.

The members of United Way of Brevard County, for example, will receive more than $153,500, of which about $34,000 was money designated for particular groups. Overall, 60% of all contributions were earmarked by donors.

The International Health Agencies will receive approximately $13,500, and the National Health Agencies will receive about $46,000, according to Col. Rubeor.

The four local agencies, participating on a limited basis, will receive about $5,000, he said. They are Crosswinds, Hacienda Girls' Ranch, Inc.; H.O.W. House, Inc.; and the Leukemia Society of America.

-more-

The two largest Federal institutions in the county -- Kennedy Space Center and the Eastern Space and Missile Center and its tenant organizations -- both exceeded their goals, KSC by 111% and ESMC by 112%.

The ESMC drive raised $78,365, and KSC employees contributed $121,944.

Col. Rubeor said that all CFC returns are in except for the U. S. Coast Guard. That was delayed, he said, because the Coast Guard Cutter Courageous only returned from dry dock in Maryland last week.

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KSC Release No. 212

TULANE GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Mark R. Schlomer, a 1976 graduate of the Tulane University School of Law, was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Schlomer is an assistant counsel for the Center's Office of Chief Counsel. He is responsible for providing legal advice and support to management at the Kennedy Space Center in decisions concerning personnel matters.

A citation accompanying the award praised Schlomer for "excellent advice and counsel to elements of the Kennedy Space Center in the areas of personnel program management and civil service labor relations.

Schlomer was graduated from Cherry Hill High School West, Cherry Hill, Pa., in 1969. He then attended Muhlenberg College in Allentown, Pa., earning a bachelor of arts degree in political science in 1973. After earning a juris doctor degree from Tulane, he began working at the Kennedy Space Center in 1977

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KSC Release No. 213

WEST POINT GRADUATE RECEIVES NASA SERVICE AWARD

KENNEDY SPACE CENTER, Fla.- William D. Lutz, a 1943 graduate of the U.S. Military Academy, was honored at an annual awards ceremony at NASA's John F. Kennedy Space Center for completing forty years of government service.

Lutz is an aerospace engineer involved in vehicle testing which must be done to prepare the Space Shuttle for launch.

A citation accompanying the award praised Lutz for "faithful service to the National Aeronautics and Space Administration and to the Government of the United States of America."

Lutz was graduated from Miami High School in 1937, then entered the U.S. Military Academy, earning his bachelor of sciences degree in engineering. He served in the U.S. Army from 1943 to 1968, reaching the rank of lieutenant colonel. He began work at the Kennedy Space Center in 1968.

Lutz lives with his wife Jean in Cocoa Beach, Fla. They have a son and a daughter, William, Jr., and Toni.

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KSC Release No. 214

M. I. T. GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- John R. Jamieson, a 1967 graduate of the Massachusetts Institute of Technology in Cambridge, Mass., was awarded the NASA Certificate of Commendation during an awards ceremony at the John F. Kennedy Space Center.

Jamieson is a senior software engineer for the Center's fluid services division. He is responsible for the loading of liquid oxygen and liquid hydrogen onto the Space Shuttle vehicle before launch. These super-cold liquids will be carried in the large external tank and will fuel the Space Shuttle orbiter's main engines.

A citation accompanying the award praised Jamieson for "outstanding technical leadership in the development and verification of the main propulsion system propellent loading software for the shuttle transportation system."

Jamieson was graduated from Arlington High School, Arlington, Texas, in 1963. He then entered M.I.T., earning a bachelor of sciences degree in aeronautics/astronautics. He has worked at the Kennedy Space Center since 1967.

Jamieson lives in Merritt Island, Fla., with his wife Joan and their children John, Jacqueline, Jeanette and Diana.

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KSC Release No. 2/3

## F. I. T. GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Warren I. Wiley, a 1971 graduate of the Florida Institute of Technology, was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Wiley is an aerospace engineer, responsible for testing and preparation of the Space Shuttle main propulsion system, which features the three main engines of the Space Shuttle orbiter. These engines will provide 1.4 million pounds of thrust and are designed to be reusable for subsequent launches.

A citation accompanying the award praised Wiley for "outstanding professionalism, leadership and dedication to the Center's mission in the unscheduled modification of the Space Shuttle main engines."

Wiley was graduated from Naples Central School, Naples, N.Y., in 1967. He received a bachelor of science degree in space technology from F.I.T. in 1971, then earned a master of sciences degree in computer sciences in 1974. He began working at the Kennedy Space Center in 1971.

Wiley lives in Merritt Island, Fla., with his wife Judy and their daughters Laura and Kristina.

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KSC Release No. 216

SYRACUSE GRADUATE RECEIVES NASA SERVICE AWARD

KENNEDY SPACE CENTER, Fla.- Paul E. Ferris, a 1950 graduate of Syracuse University, Syracuse, N.Y., was honored at an awards ceremony at NASA's John F. Kennedy Space Center for completing thirty years of government service.

Ferris is a contract specialist with the Center's Procurement office. He is responsible for procuring architectural services, ground support equipment and construction work needed for successful launch of the Space Shuttle.

A citation accompanying the award praised Ferris for "faithful servuce to the National Aeronautics and Space Administration and the Government of the United States of America."

After graduation from Camden High School in Camden N.Y., Ferris served in the U.S. Navy for three years. He then attended Syracuse, earning a bachrlor of sciences degree in business administration. He has worked at the Kennedy Space Center since 1964.

Ferris lives in Satellite Beach, Fla., with his wife Shirley and children, Timothy, Patti Ann and Lori Ann.

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KSC Release No. 217

## MISSISSIPPIS STATE GRADUATE RECEIVES NASA SERVICE AWARD

KENNEDY SPACE CENTER, Fla.- Edmund F. Smith, a 1948 graduate of Mississippi State College, State College, Miss., was honored during an annual awards ceremony at NASA's John F. Kennedy Space Center for completing thirty-five years of government service.

Smith is the chief of the Center's structural systems division which is responsible for the management of the buildings and machines which will support the Space Shuttle preparation and launch at the Kennedy Space Center.

A citation accompanying the award praised Smith for "faithful service to the National Aeronautics and Space Administration and to the Government of the United States of America."

Smith was graduated from Clarksdale High School in Clarksdale, Miss., in 1941. He then served for three years in the U.S. Army Corps of Engineers, reaching the rank of Captain. Smith received a bachelor of science degree from Mississippi State in electrical engineering and began work at the Kennedy Space Center is 1961.

Smith lives in Titusville, Fla., with his wife Juanita. They have a daughter and two sons, Lucy, Edmund, Jr., and James.

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KSC Release No. 218

## CENTRAL STATE GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Lex O. Pierce, a 1962 graduate of Central State University, Edmond, Okla., was awarded the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Pierce is chief of the Center's Supply and Transportation division and is specifically responsible for implementing a new computer system for inventory management.

A citation accompanying the award praised Pierce for "excellent management in providing Shuttle inventory management support at the Kennedy Space Center."

Pierce was graduated from Tuttle High School, Tuttle, Okla., in 1958. He then entered Central State, where he earned a bachelor of science in business administration. He began working at the Kennedy Space Center in 1967.

Pierce lives in Titusville, Fla., with his wife Edith and children Teri, Denise, Mitch and Lex, Jr.

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KSC Release No. 219

ROLLINS GRADUATE RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- W. N. (Bill) McClintock, a 1968 graduate of Rollins College in Winter Park, Fla., was presented with the Kennedy Space Center Equal Opportunity Award during an annual awards ceremony.

McClintock is the KSC property and supply officer and is responsible for the supervision of the Center's supply and equipment requirements.

A citation accompanying the award praised McClintock for "outstanding and effective support of the Equal Opportunity Program at the John F. Kennedy Space Center."

McClintock was graduated from Oxford High School, in Oxford, Ala., in 1942. He began working for the Kennedy Space Center from Rollins in 1968, then received a master of business administration degree from Stetson University in 1972.

McClintock lives in Cocoa Beach, Fla., with his wife Gertrude. They have a son and a daughter, Darius and Deborah.

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KSC Release No. 220

## UNIV. OF SOUTH FLORIDA GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- David A. Brown, a 1971 graduate of the University of South Florida in Tampa, Fla., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Brown is an aerospace technicial in the Center's projects and systems engineering branch, and provides computers support during testing and launch of Atlas-Centaur and Delta launch rockets. The Atlas-Centaur and Delta are the primary expendable rockets used by NASA to boost light and medium-weight payloads into earth orbit.

A citation accompanying the award praised Brown for his "technical expertise and excellence demonstrated in software development and operational test support on the Raytheon computer used to support Delta and tlas-Centaur prelaunch tests and launches."

Brown was graduated from Chamberlain High School in Tampa in 1965, then attended South Florida, receiving a bachelor of sciences degree in electrical engineering. He began working at the Kennedy Space Center while still a student at USF and continued working on a full-time basis after graduation.

Brown lives in Titusville, Fla., with his wife Margo and daughter Jennifer, 3.

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KSC Release No. 221

DARTMOUTH GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Arthur J. (Skip) Mackey, a 1953 graduate of Dartmouth College, Hanover, N.H., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Mackey is chief of the Data, Communications and Facilities branch, involved in telemetry systems, data acquisition and processing display and interpretation. He has provided planning and leadership for retrieval and analysis of critical data for twenty-two major launches of Atlas-Centaur and Delta rockets. The launch vehicles are NASA's most widely used in lifting light and medium-weight payloads into earth orbit.

A citation accompanying the award praised Mackey for "exceptional technical leadership in planning and implementing the retrieval and analysis of essential performance data in support of all expendable vehicle and spacecraft tests and launch operations."

Mackey was graduated from Glens Falls High School, Glens Falls, N.Y., in 1951. He then attended Dartmouth, where he graduated Magna Cum Laude with a bachelor of arts degree in engineering science. He attended the Thayer School of Engineering in Hanover, then served for three years in the U.S. Navy, reaching the rank of lieutenant. He has worked at the Kennedy Space Center since 1959.

Mackey lives in Cocoa Beach, Fla., with his wife Susan and children Donna, Jeri and Paige.

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KSC Release No. 222

MARSHALL UNIVERSITY GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Wayne R. Graham, a 1967 graduate of Marshall University in Huntington, W. Va., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Graham is an aerospace technician, responsible for design of launch critical and safety water systems. He is specifically involved in Launch Complex 39's Water Sound Suppression System, a complex "sprinkler" system which will pour over 300,000 gallons of water onto the base of the Space Shuttle launch pad within a few seconds to ease the flame and noise generated by a Shuttle launch.

A citation accompanying the award praised Graham for "exceptional engineering ability and personal dedication in the development, design, installation and validation of launch critical water systems essential to the Center's Shuttle Transportation System mission."

After graduation from Huntington East High School, Graham entered Marshall University, where he received a bachelor of sciences degree in civil engineering. He began work at the Kennedy Space Center in 1967.

Graham lives in Titusville, Fla., with his wife, the former Judy Wingert of Huntington, and their daughters, Teresa, Tonia, Tara and Tia.

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KSC Release No. 2-3

## UNIVERSITY OF ARKANSAS GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Donald W. Page, a 1957 graduate of the University of Arkansas in Fayetteville, Ark., was presented with the NASA Certificate of Commendation at an awards ceremony at the John F. Kennedy Space Center.

Page is chief of the Servicing Systems section and is responsible for troubleshooting computer programs for various launch processes. These programs control such processes as the loading of propellants into the Space Shuttle vehicle.

A citation accompanying the award praised Page for "innovative leadership in developing documentation for the launch processing system software-controlled systems."

Page was graduated from Springdale High School in Springdale, Ark., in 1950. He then served for three years in the U.S. Air Force, reaching the rank of Airman first class. He then entered the Univ. of Arkansas, receiving a bachelor of sciences degree in electrical engineering. He has worked at the Kennedy Space Center since 1962.

Page lives in Titusville, Fla., with his wife Nancy and children Donna, Janet, Carol and Robert.

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KSC Release No. 224

ALABAMA GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- William C. Jones, a 1968 graduate of the University of Alabama at Tuscaloosa, was presented with the NASA Certificate of Commendation at an annual awards ceremony at NASA's John F. Kennedy Space Center.

Jones is an aerospace technician in the engineering support office, and is responsible for providing technical guidelines to system engineers to produce safety and reliability documentation.

A citation accompanying the award praised Jones for "his exceptional technical skill, managerial ability, and personal diligence in the reliability and safety analyses of the Shuttle Transportation System ground support equipment and systems."

Jones was graduated from Winchester High School in Winchester, Mass., in 1963. He then entered the University of Alabama, where he earned a bachelor of sciences degree in industrial engineering. He began working at the Kennedy pace Center in 1968 and has since completed graduate work at Stetson University in Deland, Fla., receiving a master of business administration in 1973.

Jones lives in Merritt Island, Fla., with his wife Carla and sons Brian, Brad and William.

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KSC Release No. 225

HOFSTRA GRADUATE RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Donald J. Capone, a 1959 graduate of Hofstra University, Uniondale, N.Y., was presented with the NASA Exceptional Service Medal in an awards ceremony at the John F. Kennedy Space Center.

Capone is a program analysis officer and has been an integral part of planning reams dealing with such important facets of the Space Shuttle program as cost-estimating, resources management and cargo planning management.

A citation accompanying the award praised Capone for "outstanding contribution to the nation's space program" while serving at various positions in the past few years.

Capone was graduated from Sewanhaka High School, Floral Park, N.Y., in 1950. He served in the U.S. Navy for four years, reaching the rank of torpedoman third class. He then entered Hofstra, where he earned a bachlor of business administration in accounting. He later completed graduate work at St. John's University, New York, N.Y., in 1963. After working for the U. S. General Office and the Federal Aviation Agency, Capone began working for the Kennedy Space Center in 1967.

Capone lives in Cocoa Beach, Fla., with his wife Janice and their children, Janice and Eugene.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flight in early 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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SOUTHERN MISSISSIPPI GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Robert B. (Brad) Hughes, a 1960 graduate of the University of Southern Mississippi at Hattiesburg, was presented with the NASA Certificate of Commendation at an annual awards ceremony at the John F. Kennedy Space Center.

Hughes is an electronics engieer in the Center's applications and simulation branch and has been instrumental in the development of computer software in support of the Space Shuttle. The actual launch process and much of the preparation that is done in readying the different parts of the Space Shuttle is monitored and controlled by a massive computer called the Launch Processing System. Hughes has been integral in the programming of this computer system for the completely new and unique task of supporting Space Shuttle launch.

A citation accompanying the award praised Hughes for "outstanding contribution and exceptional service in the design, development and implementation of the Launch Processing System/Central Data Subsystem applications essential to the processing and launch of the Space Shuttle."

Hughes was graduated from Magee High School in Magee, Miss., in 1949. He served in the U.S. Army for two years, then entered U.S.M., where he earned a bachelor of sciences degree in math. He has worked at the Kennedy Space Center since 1962.

Hughes lives in Rockledge, Fla., with his wife, the former Ellowine Warren of Magee, Miss.

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SOUTHERN GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- J. Albert Diggs, Jr., a 1962 graduate of Southern University in Baton Rouge, La., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Diggs is the acting chief of KSC's Equal Opportunity Program Office and is responsible for developing and implementing the Center's Affirmative Action Program for employment and advancement of NASA personnel.

A citation accompanying the award praised Diggs for his "outstanding contributions to Kennedy Space Center's Equal Opportunity Program through leadership and personal dedication."

Diggs was graduated from Booker T. Washington High School in New Orleans, La., in 1957, and earned a bachelor of sciences degree in spanish and english in 1962. He has worked at the Kennedy Space Center since 1973.

Diggs lives it Titusville, Fla., with his wife Barbara and their three children, Jay, Demond and Todd.

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GEORGIA TECH GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- John C. McBrearty, a 1965 graduate of the Georgia Insititute of Technology in Atlanta, Ga., was awarded the NASA Certificate of Commendation in an awards ceremony at the John F. Kennedy Space Center.

McBrearty is a technical assistant in the technical support section at the Kennedy Space Center. He is specifically involved in planning how different payloads will be placed in the cargo bay of the Space Shuttle orbiter, ensuring that the Shuttle will be used as effectively as possible.

A citation accompanying the award praised McBrearty for "his achievement in establishing and implementing the Kennedy Space Center Cargo Projects configuration control board."

McBrearty was graduated from Lanier High School in Macon, Ga., in 1960. He received a bachelor of electrical engineering from Ga. Tech. in 1965 and is currently completing graduate work at the Florida Insititute of Technology. He began working at the Kennedy Space Center in 1965.

McBrearty lives in Cocoa, Fla., with his wife Emylee and daughters Susan and Kelly.

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V. P. I. GRADUATE RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Paul D. Myers, a 1963 graduate of the Virginia Polytechnic Institute, was presented with the NASA Exceptional Service Medal in an awards ceremony at the John F. Kennedy Space Center.

Myers is the director of project management and is responsible for resources planning and use in the design and acquisition of facilities and ground systems for the Space Shuttle.

A citation accompanying the award praised Myers for "outstanding performance in the field of resources planning and execution in support of the Space Shuttle program at Kennedy Space Center."

Myers was graduated from Jefferson High School, Roanoke, Va., in 1957. He then entered V.P.I., earning a bachelor of sciences degree in mechanical engineering. He later completed graduate work at the University of Florida in 1965. Myers served for three years in the U.S. Air Force, reaching the rank of first lieutenant in the 6555th Aerospace Test Wing. He began working at the Kennedy Space Center in 1965.

Myers lives in Titusville, Fla., with his wife Nancy and their children Scott and Paula.

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TENNESSEE GRADUATE RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Edwin S. Morgan, a 1959 graduate of the University of Tennessee in Knoxville, was presented with the NASA Exceptional Service Medal in an annual awards ceremony at the John F. Kennedy Space Center.

Morgan is chief of the Center's AD Power Design section and is responsible for the design of all electrical systems at KSC. He was responsible for the design of a new emergency power system which will reduce operating costs by an estimated $1 million over the next ten years.

A citation accompanying the award praised Morgan for "outstanding achievements in the development of the emergency power system and the development and integration of the complex control systems at Kennedy Space Center."

Morgan was graduated from Hendersonville High School in Hendersonville, N.C., in 1949. He served for two years in the U.S ARmy Transportation Corps, reaching the rank of first lieutenant. He then entered the University of Tennessee, earning a bachelor of science degree in 1959. Morgan has worked at the Kennedy Space Center since 1964.

Morgan lives in Merritt Island, Fla., with his wife Gail. They have a son and a daughter, Michael and Kelly.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flight in March, 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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F. I. T. GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Alex S. Dula, Jr., a 197- graduate of the Florida Institute of Technology with a master of sciences degree in electrical engineering, was presented with the NASA Certificate of Commendation at an annual awards ceremony at the John F. Kennedy Space Center.

Dula is an electronics engineer in the storage and display section of the Center's digital systems division. He is involved in the preparation of Spacelab, a self-contained orbital laboratory, so that it will fit and function properly in the cargo hold of the Space Shuttle orbiter.

A citation accompanying the award praised Dula for his "outstanding performance as lead system engineer for the payload checkout unit, solid rocket booster checkout system, and continuing contribution to the ongoing payload and shuttle projects."

Dula was graduated from Belmont High School in Dayton, Ohio, then attended Ohio State University where he earned a bachelor of science degree in physics and math in 1968. He served one year in the U.S. Navy before coming to work at the Kennedy Space Center in 1969. He lives in Merritt Island, Fla., and is actively involved in the Civil Air Patrol.

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## OHIO STATE GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Alex S. Dula, Jr., a 1968 graduate of Ohio State University in Columbus, Ohio, was presented with a Certificate of Commendation at an annual awards ceremony at NASA's John F. Kennedy Space Center.

Dula is an electronics engineer in the storage and display section and is involved in the preparation of Spacelab, a self-contained orbital laboratory, so that it will fit and function properly in the cargo hold of the Space Shuttle orbiter.

A citation accompanying the award praised Dula for "his outstanding record of performance as lead system engineer for the payload checkout unit, solid rocket booster checkout system, and continuing contribution to the ongoing payload and shuttle projects."

Dula was graduated from Belmont High School in Dayton, Ohio, then attended Ohio State where he earned a bachelor of sciences degree in physics and math. Dula later received a master of sciences degree in electrical engineering from the Florida Institute of TEchnology in 1974. Dula lives in Merritt Island, Fla., and is actively involved in the Civil Air Patrol.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flight in March, 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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UNIVERSITY OF MIAMI GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Ted L. Oglesby, a 1959 graduate of the University of Miami, Miami, Fla., was awarded the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Oglesby is the chief of the integration and landing operations branch and is involved in the final stage of the Space Shuttle orbiter's mission, when it will return from orbit and land like an airplane on runways at the Kennedy Space Center, Kryden Flight Research Center in California, and other landing sites throughout the world.

A citation accompanying the award praised Oglesby for "outstanding leadership in the development of plans and agreements to support the first scheduled Space Shuttle orbiter landing at Dryden Flight Research Center and other landing sites."

Oglesby was graduated from Atherton High School, Atherton, Calif., in 1954. He then attended the Univ. of Miami, where he received a bachelor of sciences degree in electrical engineering. He began working at the Kennedy Space Center in 1959.

Oglesby lives in Satellite Beach, Fla., with his wife Sonja and children Karen, Kimberly and Douglas.

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## KENTUCKY GRADUATE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- John G. Fraley, a 1968 graduate of the University of Kentucky in Lexington, Ky., was awarded the NASA Certificate of Commendation during an awards ceremony at the John F. Kennedy Space Center.

Fraley is a mechanical/structural engineer for the Center's mechanical systems division. He is responsible for handling and access for the Space Shuttle orbiter while it is being prepared for launch.

A citation accompanying the award praised Fraley for "exceptional contribution in requirements development, checkout and modification of the Orbiter Processing Facility and orbiter access provisions."

Fraley was graduated from Breckenridge Training School in Morehead, Ky., in 1963. He received a bachelor of sciences degree at Kentucky, majoring in mechanical engineering. He has worked at the Kennedy Space Center since 1968. He lives with his wife Joanne in Titusville, Fla.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flight in March, 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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UNIVERSITY OF CHATTANOOGA GRADUATE RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Conrad G. Nagel, a 1960 graduate of the University of Chattanooga, was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Nagelis the site manager for the Vehicle Assembly Building, the massive building at KSC where the Apollo rockets were assembled before being moved out to the launch pad. The VAB is now being used as an assembly site for the different parts of the Space Shuttle.

Nagel is responsible for overseeing all VAB operations. He was specifically involved in defining safety guidelines for the potentially hazardous task of assembling the Shuttle vehicle.

A citation accompanying the award praised Nagel for "outstanding leadership and exceptional management and dedication in developing and refining philosophy, concepts and impacts associated with the solid rocket booster VAB hazards study."

Nagel was graduated from Red Bank High School in Chattanooga, in 1956. He then attended Georgia Tech, receiving a bachelor of sciences degree in engineering physics. He served for three years in the U.S. Army, reaching the rank of lieutenant. He began working at the Kennedy Space Center in 1965.

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## DARLINGTON NATIVE RECEIVES NASA SERVICE AWARD

KENNEDY SPACE CENTER, Fla.- Ben W. Hursey, a native of Darlington, S.C., and a graduate of St. John's High School, was honored during an awards ceremony at NASA's John F. Kennedy Space Center for forty years of government service.

Hursey is the director of the Center's personnel office and is responsible for professional staffing, employee development, personnel management and advisory services.

A citation accompanying the award praised Hursey for "faithful service to the National Aeronautics and Space Administration and to the Government of the United States of America."

After graduation from St. John's High School, Hursey attended Lees-McRae College in Banner Elk, North Carolina. He entered the U.S. Coast Guard in 1940, serving for five years and reaching the rank of chief petty officer.

Hursey has worked at several of the birthplaces of the nation's space program, such as the Army Raritan Arsenal in Metuchen, N.J., the Army Ballistic Missile Agency in Huntsville, Ala., and the Marshall Space Flight Center in Huntsville. In 1962, Hursey came to the Launch Operations Center in Cape Canaveral, Fla., which was renamed the Kennedy Space Center the following year. Hursey lives in Titusville, Fla., with his wife Connie.

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## ROME NATIVE RECEIVES NASA SERVICE AWARD

KENNEDY SPACE CENTER, Fla.- Thomas F. Locklear, a 1948 graduate of Boys High School, Rome, Ga., was honored at an annual awards ceremony at NASA's John F. Kennedy Space Center for completing thirty years of government service.

Locklear is a quality assurance representative for the Center, inspecting facilities and programs for the high level of quality and reliability which must be present when preparing for a manned space flight.

A citation accompanying the award praised Locklear for "faithful service to the National Aeronautics and Space Administration and to the Government of the United States of America."

After graduation from Boys High School, Locklear served in the U.S. Navy for two years, reaching the rank of Seaman first class. In 1950, he joined the U.S. Marine Corps, reaching the rank of sergeant by his retirement in 1954. Locklear came to work at the Kennedy Space Center in 1966.

Locklear lives in New Smyrna Beach, Fla., with his wife Doris and daughters, Terrye, Trudy, Tina, Tricia, Tammy and Tonya.

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## OHIO UNIVERSITY GRADUATE RECEIVES NASA DIRECTOR'S AWARD

KENNEDY SPACE CENTER, Fla.- James E. Rice, a 1954 graduate of Ohio University in Athens, Ohio, was presented with the Director's Award by Kennedy Space Center Director Richard G. Smith during a recent awards ceremony.

Rice is the deputy chief of KSC's Procurement office, which was responsible for procurement of goods and services for the Space Center totalling over $368 million for fiscal year 1980.

A citation accompanying the Director's Award, KSC's highest honor, praised Rice for "outstanding leadership and quidance in the conduct of Source Evaluation Boards and major acquisitions at the John F. Kennedy Space Center."

Rice was graduated from Cashocton High School, Cashocton, Ohio, in 1950. After receiving a bachelor of sciences degree in law from Ohio University, he studied at Ohio State University, where he received a juris doctor degree in 1959. Rice served two years in the U.S. Army where he reached the rank of first lieutenant before beginning work at the Kennedy Space Center in 1964.

Rice lives in Satellite BEach, Fla., with his wife Arleen and daughter Nicole, 13.

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CAMDEN NATIVE RECEIVES NASA SERVICE AWARD

KENNEDY SPACE CENTER, Fla.- Paul E. Ferris, a 1943 graduate of Camden High School, Camden, N.Y., was honored during an awards ceremony at NASA's John F. Kennedy Space Center for completing thirty years of government service.

Ferris is a contract specialist with the Center's Procurement office. He is responsible for procuring architectural service, ground support equipment and construction work needed for successful launch of the Space Shuttle.

A citation accompanying the award praised Ferris for "faithful service to the National Aeronautics and Space Administration and to the Government of the United States of America."

After graduation from Camden High School, Ferris servied in the U.S. Navy for three years, earning two medals for his participation in the Asian/Pacific theater in World War II. He then attended Syracuse University, earning a bachelor of sciences degree in business administration in 1950. He has worked at the Kennedy Space Center since 1964.

Ferris lives in Satellite Beach, Fla., with his wife, the former Shirley Dennis of Camden. They have three , Timothy, Patti Ann and Lori Ann.

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## FORMER ARLINGTON RESIDENT RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- John R. Jamieson, a 1963 graduate of Arlington, Texas, was awarded the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Jamieson is a senior software engineer for the Center's fluid services division. He is responsible for the loading of liquid oxygen and liquid hydrogen onto the Space Shuttle vehicle before launch. These super-cold liquids will be carried in the large external tank and will fuel the Space Shuttle orbiter's main engines.

A citation accompanying the award praised Jamieson for "outstanding technical leadership in the development and verification of the main propulsion system propellant loading software for the shuttle transportation system."

After graduation from Arlington High School, Jamieson entered the Massachusetts Institute of Technology in Cambridge, Mass, earning a bachelor of sciences degree in aeronautics/astronautics in 1967. He began working at the Kennedy Space Center in 1967.

Jamieson lives in Merritt Island, Fla., with his wife Joan and their children, John, Jacqueline, Jeanette and Diana.

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## FORMER NAPLES RESIDENT RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Warren I. Wiley, a 1967 graduate of Naples Central School, Naples, N.Y., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Wiley is an aerospace engineer, responsible for testing and preparation of the Space Shuttle main propulsion system, which features the three main engines of the Space Shuttle orbiter. The compact engines provide 1.4 million pounds of thrust at liftoff and are designed to be reusable for subsequent launches.

A citation accompanying the award praised Wiley for "outstanding professionalism, leadership and dedication to the Center's mission in the unscheduled modification of the Space Shuttle main engines."

After graduation from Naples Central School, Wiley attended the Florida Institute of Technology in Melbourne, Fla., where he earned a bachelor of sciences degree in space technology in 1971. He later received a master of sciences degree in computer science from F.I.T. in 1974. He has worked at the Kennedy Space Center since 1971.

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## FORMER CHERRY HILL RESIDENT RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Mark R. Schlomer, a 1960 graduate of Cherry Hill High School West, was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Schlomer is an assistant counsel for the Center's Office of Chief Counsel. His job is to provide legal advice and support to management at the Kennedy Space Center in decisions concerning personnel matters.

A citation accompanying the award praised Schlomer for "excellent advice and counsel to elements of the Kennedy Space Center in the areas of personnel program management and civil service labor relations."

After graduation from Cherry Hill High School West, Schlomer entered Muhlenberg College in Allentown, Pa., earning a bachelor of arts degree in political science in 1973. He then attended Tulane University School of Law, receiving a juris doctor degree in 1976. He began working at the Kennedy Space Center in 1977.

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## CHATTANOOGA NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Conrad G. Nagel, son of Erich and Pearl Nagel, Chattanooga, Tenn., was presented with a Certificate of Commendation during an annual awards ceremony at NASA's John F. Kennedy Space Center.

Nagel is the site manager for the Vehicle Assembly Building, the massive building at KSC where the Apollo rockets were assembled before being moved out to the launch pad. The VAB is now being used as an assembly site for the different parts of the Space Shuttle.

Nagel is responsible for overseeing all VAB operations. He was specifically involved in defining safety guidelines for the potentially hazardous task of assembling the Shuttle vehicle.

A citation accompanying the award praised Nagel for "outstanding leadership and exceptional management and dedication in developing and refining philosophy, concepts and impacts associated with the solid rocket booster VAB hazards study."

Nagel was graduated from Red BAnk High School in Chattanooga in 1956. He then attended the University of Chattanooga, where he received a bachelor of science degree in engineering physics in 1960. He served for three years in the U.S. Army, reaching the rank of lieutenant. He began working at the Kennedy Space Center in 1965.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flight in March, 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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FORMER MOREHEAD RESIDENT RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- John G. Fraley, a 1963 graduate of Breckenridge Training School, Morehead, Ky., was awarded the NASA Certificate of Commendation during an awards ceremony at the John F. Kennedy Space Center.

Fraley is a mechanical/structural engineer for the Center's mechanical systems division. He is responsible for handling and access for the Space Shuttle orbiter while it is being processed for launch.

A citation accompanying the award praised Fraley for "exceptional contribution in requirements development, checkout and modification of the Orbiter Proce-sing Facility and orbiter access provisions.

After graduation from Breckenridge Training School, Fraley entered the University of Kentucky in Lexington, where he earned a bachelor of sciences degree in mechanical engineering in 1968. He began working at the Kennedy Space Center in 1968. He lives in Titusville, Fla., with his wife Joanne.

The Kennedy Space Center is the primary launch and recovery site for the Space Shuttle scheduled to begin manned test flight in March, 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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DAYTON NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Alex S. Dula, Jr., son of Mrs. Margaret Dula, Bellaire Avenue, Dayton, Ohio, was presented with a Certificate of Commendation at an annual awards ceremony at NASA's John F. Kennedy Space Center.

Dula is an electronics engineer in the storage and display section and is involved in the preparation of Spacelab, a self-contained orbital laboratory, so that it will fit and function properly in the cargo hold of the Space Shuttle orbiter.

A citation accompanying the award praised Dula for "his outstanding record of performance as lead system engineer for the payload checkout unit, solid rocket booster checkout system, and continuing contribution to the ongoing payload and shuttle projects."

Dula was graduated from Belmont High School in Dayton, in 1962, then attended Ohio State University, earning a bachelor of sciences degree in 1968. In 1974, he received a master of sciences degree in electrical engineering from the Florida Institute of Technology. Dula served in the U.S. Navy for one year before coming to work at the Kennedy Space Center in 1969. He lives in Merritt Island, Fla., and is actively involved in the Civil Air Patrol.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flight in March, 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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National Aeronautics and
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AC 305 867-2468

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Rusty Dorr
305 867-2468

For Release:
Immediate

KSC Release No. 246

## FORMER HENDERSONVILLE RESIDENT RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Edwin S. Morgan, a 1949 graduate of Hendersonville High School, Hendersonville, N.C., was awarded the NASA Exceptional Service Medal during an awards ceremony at the John F. Kennedy Space Center.

Morgan is chief of the Center's AD Power Design Section and is responsible for the design of all electrical systems at KSC. He was responsible for the design of a new emergency power system which will reduce operating costs by an estimated $1 million over ten years.

A citation accompanying the award praised Morgan for "outstanding achievements in the developemtn of the emergency power system and the development and integration of the complex control systems at Kennedy Space Center."

After graduation from Hendersonville High School, Morgan served in the U.S. Army Transportation Corps, reaching the rank of first lieutenant. He then entered the University of Tennessee in Knoxville, earning a bachelor of science degree in electrical engineering in 1959. He has worked at the Kennedy Space Center since 1964.

Morgan lives in Merritt Island, Fla., with his wife, the former Gail Grimes of Hendersonville. They have a son and a daughter, Michael and Kelly.

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KSC Release No. 247

## ROANOKE NATIVE RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Paul D. Myers, a 1957 graduate of Jefferson High School, Roanoke, Va., was presented with the NASA Exceptional Service Medal during an awards ceremony at the John F. Kennedy Space Center.

Myers is the director of project management and is responsible for resources planning and use in the design and acquisition of facilities and ground systems for the Space Shuttle.

A citation accompanying the award praised Myers for "outstanding performance in the field of resources planning and execution in support of the Space Shuttle program at Kennedy Space Center."

After graduation from Jefferson High School, Myers entered the Virginia Polytechnic Institute in Blacksburg, Va., where he earned a bachelor of sciences degree in mechanical engineering in 1962. He completed graduate work at the University of Florida in 1962. Myers served for three years in the U.S. Air Force, reaching the rank of first lieutenant in the 6555th Aerospace Test Wing. He began working at the Kennedy Space Center in 1965.

Myers lives in Titusville, Fla., with his wife, the former Nancy Flint of Roanoke. The Myers have two children, Scott and Paula.

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KSC Release No. 248

## MACON NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- John C. McBrearty, son of John & Kathryn McBrearty, College Street, Macon, Ga., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

McBrearty is a technical assistant in the technical support section at the Kennedy Space Center. He is specifically involved in planning how different payloads will be placed in the cargo bay of the Space Shuttle orbiter, ensuring that the Shuttle will be used as effectively as possible.

A citation accompanying the award praised McBrearty for "his achievement in establishing and implementing the Kennedy Space Center Cargo Projects Configuration Control Board."

McBrearty was graduated from Lanier High School in Macon, in 1960. He then attended the Georgia Insititute of Technology in Atlanta, receiving a bachelor of electrical engineering in 1965. He is currently completing graduate work at the Florida Institute of Technology. He began working at the Kennedy Space Center in 1965.

McBrearty lives in Cocoa, Fla., with his wife Emylee and daughters Susan and Kelly.

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KSC Release No. 249

## MAGEE NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Robert B. (Brad) Hughes, a 1949 graduate of Magee High School, was presented with the NASA Certificate of Commendation at an annual awards ceremony at the John F. Kennedy Space Center.

Hughes is an electronics engineer in the Center's applications and simulation branch and has been instrumental in the development of applications and simulation computer software in support of the Space Shuttle. The actual launch process and much of the preparation that is done in readying the different components of the Shuttle vehicle is monitored and controlled by a massive computer called the Launch Processing System. Hughes has been involved in the programming of this computer system for the completely new and unique task of supporting Space Shuttle preparation and launch.

A citation accompanying the award praised Hughes for "outstanding contribution and exceptional service in the design, development, and implementation of Launch Processing System/Central Data Subsystem applications essential to the processing and launch of the Space Shuttle."

After graduation from Magee High School, Hughes served in the U.S. Army for two years, then entered the University of Southern Mississippi in Hattiesburg. He received a bachelor of sciences degree in math in 1960. He began working for the Kennedy Space Center in 1962.

Hughes lives in Rockledge, Fla., with his wife, the former Ellowine Warren of Magee.

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KSC Release No. 250

LEXINGTON NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- William C. Jones, the son of Mr. & Mrs. Harry Jones, Lake Tower Drive, Lexington, was presented with the NASA Certificate of Commendation at an annual awards ceremony at the John F. Kennedy Space Center.

Jones is an aerospace technician in the engineering support office and is responsible for providing technical guidelines to system engineers to produce safety and reliability documentation.

A citation accompanying the award praised Jones for "his exceptional technical skill, managerial ability, and personal diligence in the reliability and safety analyses of the Shuttle Transportation System ground support equipment and systems."

Jones was graduated from Winchester High School in Winchester, Mass, in 1963. He received a bachelor of sciences degree in industrial engineering from the University of Alabama in Tuscaloosa in 1968. He began working at the Kennedy Space Center in 1968 and has since comepleted graduate work at Stetson University in DeLand, Fla.

Jones lives in Merritt Island, Fla., with his wife Carla and sons Brian, Brad and William.

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## CLAREMONT NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Konstanty Kebalka, a 1940 graduate of Stevens High School, Claremont, N.H., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Kebalka is a project engineer for the Center's Vertical Processing Facility, an environmentally-controlled building where some payloads for Space Shuttle flights will be installed in a large cannister, which will then be installed at the launch pad. Payloads which require vertical installation include most scientific, and communication satellites.

A citation accompanying the award praised Kebalka for "his outstanding contributions and dedication while serving as project engineer for the Vertical Processing Facility."

After graduation from Stevens High School, Kebalka received two bachelor of sciences degrees from the Univeristy of Maryland in College Park, Md., in 1952 and 1959. He began work at the Kennedy Space Center in 1967 and received a master of business administration from Florida State University in 1973.

Kebalka lives in Titusville, Fla., with his wife, the former Elriede Brandt, also of Claremont.

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## SPRINGDALE NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Donald W. Page, son of Mrs. Katheryn Page, Daphne Street, Springdale, Ark., was awarded the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Page is chief of the Servicing Systems section and is responsible for troubleshooting computer programs for various launch processes, such as the loading of propellants into the Space Shuttle vehicle.

A citation accompanying the award praised Page for "innovative leadership in developing documentation for the launch processing system software-controlled systems."

Page was graduated from Springdale High School in 1950, then served for three years in the U.S. Air Force, reaching the rank of Airman first class. He attended the University of Arkansas in Fayetteville, receiving a bachelor of sciences degree in electrical engineering in 1958. He has worked at the Kennedy Space Center since 1962.

Page lives in Titusvi-le, Fla., with his wife Nancy and children Donna, Janet, Carol and Robert.

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SPARTANBURG NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Carroll V. Hughes, a 1943 graduate of Spartanburg High School, was presented with a Certificate of Commendation during an annual awards ceremony at NASA's John F. Kennedy Space Center.

Hughes is an engineering technician in the fixed and mobile systems branch and serves as a technical representative in the Launch Equipment Test Facility (LETF). The LETF is a prototype workshop where fixtures to be installed at the launch pad can be developed and tested before actual installation.

A citation accompanying the award praised Hughes for "superior leadership, demonstrated technical capability and personal dedication in the fabrication, assembly and testing of the external tank gaseous oxygen vent system in the Launch Equipment Test Facility."

After graduation from Spartanburg High School, Hughes served in the U.S. Navy from 1945 to 1948, reaching the rank of Seaman second class. Hughes lives in Mims, Fla., with his wife Grace.

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## OHIO STATE GRADUATE RECEIVES NASA DIRECTOR'S AWARD

KENNEDY SPACE CENTER, Fla.- James E. Rice a 1959 graduate of Ohio State University in Colombus, Ohio, was presented with the Director's Award by Kennedy Space Center Director Richard G. Smith during a recent awards ceremony.

Rice is the deputy chief of KSC's Procurement office, which was responsible for procurement of goods and services for the Space Center totalling over $368 million for fiscal year 1980.

A citation accompanying the Director's Award, KSC's highest honor, praised Rice for "outstanding leadership and guidance in the conduct of Source Evaluation Boards and major acquisitions at the John F. Kennedy Space Center."

Rice was graduated from Cashocton High School, Cashocton, Ohio, in 1950. In 1954, he received a bachelor of sciences degree from Ohio University in law, before entering Ohio State, where he earned a juris doctor degree in 1959. Rice served for two years in the U.S. Army, where he reached the rank of first lieutenant. He began working at the Kennedy Space Center in 1964.

Ricelives in Satellite Beach, Fla., with his wife Arleen and daughter Nicole, 13.

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CASHOCTON NATIVE RECEIVES NASA DIRECTOR'S AWARD

KENNEDY SPACE CENTER, Fla.- James E. Rice, a 1950 graduate of Cashocton High School, Cashocton, Ohio, was presented with the Director's Award by Kennedy Space Center Director Richard G. Smith during a recent awards ceremony.

Rice is the deputy chief of KSC's Procurement office, which was responsible for procurement of goods and services for the Space Center totalling over $368 million for fiscal year 1980.

A citation accompanying the Director's Award, KSC's highest honor, praised Rice for "outstanding leadership and guidance in the conduct of Source Evaluation Boards and major acquisitions at the John F. Kennedy Space Center."

After graduation from Cashocton High School, Rice entered Ohio University in Athens, Ohio, where he earned a bachelor of science degree in law in 1954. In 1959, he received a juris doctor degree from Ohio State University in Columbus. Rice served for two years in the U.S. Army, reaching the rank of first lieutenant. He began working at the Kennedy Space Center in 1964.

Rice lives in Satellite Beach, Fla., with his wife Arleen and daughter Nicole, 13.

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KSC Release No. 256

## HUNTINGTON NATIVE RECEIVES NASA COMMENDATION

KENNEDY SPACE CENTER, Fla.- Wayne R. Graham, a 1958 graduate of Huntington East High School, Huntington, W. Va., was presented with the NASA Certificate of Commendation in an annual awards ceremony at the John F. Kennedy Space Center.

Graham is an aerospace technician, responsible for design of launch critical and safety water systems. He is specifically involved in the Water Sound Suppression System at Launch Complex 39, a complex "sprinkler system" which will pour 300,000 gallons of water on to the base of the launch pad within a few seconds to ease the flame and noise generated during launch of the Space Shuttle.

A citation accompanying the award praised Graham for "exceptional engineering ability and personal dedication in the development, design, installation and validation of launch critical water systems essential to the Center's Shuttle Transportation System mission."

After graduation from Huntington East High School, Graham entered Marshall University in Huntington, where he received a bachelor of sciences degree in civil engineering in 1967. He began working at the Kennedy Space Center in 1967.

Graham lives in Titusville, Fla., with his wife, the former Judy Wingert of Huntington, and their daughters, Teresa, Tonia, Tara and Tia.

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KSC Release No. 257

## FORMER TUTTLE RESIDENT RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Lex O. Pierce, a 1958 graduate of Tuttle High School, Tuttle, Okla., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Pierce is chief of the Center's Supply and Transportation division and is responsible specifically for implementing a new computer system for inventory management.

A citation accompanying the award praised Pierce for "excellent management in providing Shuttle inventory management support at the Kennedy Space Center."

After graduation from Tuttle High School, Pierce entered Central State University in Edmond, Okla., where he earned a bachelor of science degree in business administration in 1962. He began working at the Kennedy Space Center in 1967.

Pierce lives in Titusville, Fla., with his wife, the former Edith Klippel of Tuttle. The Pierce's have four children, Denise, Teri, Mitch and Lex, Jr.

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NORTH CAROLINA STATE GRADUATE RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Charles G. Stevenson, a 1964 graduate of North Carolina State College, was presented with the NASA Certificate of Commendation during an awards ceremony at the John F. Kennedy Space Center.

Stevenson is the lead engineer for the Center's systems dealing with the External Tank, the huge tank which will supply fuel for the Space Shuttle orbiter's main engines during launch. Stevenson is responsible for the mechanical, structural and thermal protection systems of the external tank.

After graduation from Scotland Neck High School, Scotland Neck N.C., Stevenson attended N.C. State, where he received a bachelor of sciences degree in physical science and mathematics. He later received a master of sciences degree in engineering mechanics in 1966, then began working at the Kennedy Space Center.

Stevenson lives in Titusville, Fla., with his wife Helen and children Helen and Charles.

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KSC Release No. 259

PALMYRA NATIVE RECEIVES NASA AWARD

KENNEDY SPACE CENTER, Fla.- Charles G. Stevenson, son of Mr. and Mrs. James R. Stevenson, Palmyra, N.C., was presented with the NASA Certificate of Commendation during an annual awards ceremony at the John F. Kennedy Space Center.

Stevenson is the lead engineer for the Center's systems dealing with the External Tank, the huge tank which will supply fuel for he Space Shuttle orbiter's engines during launch. Stevenson is responsible for the mechanical, structural, and thermal protection systems of the external tank.

Stevenson was graduated from Scotland Neck High School in 1960. He then attended North Carolina State College, where he earned a bachelor of sciences degree in 1964 and a master of sciences degree in 1966. He has worked at the Kennedy Space Center since 1966.

Stevenson lives in Titusville, Fla., with his wife , the former Helen Boone of Scotland Neck. The Stevenson's have two children, Helen and Charles.

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For Release
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KSC RELEASE NO. 260-80

SPACEPORT, POSTAL SERVICE, OFFER PHILATELIC CANCELLATION SERVICE

KENNEDY SPACE CENTER, FL.-- NASA's John F. Kennedy Space Center, in cooperation with the United States Postal Service, is offering a cancellation service to interested philatelists for the space flight programs at KSC.

Philatelists who wish to avail themselves of this service may do so by following the procedures outlined below:

1. Specify the event for which you wish this service. There is a limit of five covers per customer per event.

2. All covers must be self-addressed and bear at least first class postage or proper postage for international mail placed three quarters of an inch down from the right top of the cover. Envelopes should contain a filler not to exceed the thickness of a postal or computer card to assure a clear cancellation.

3. Requests for personally autographed covers, or for carrying covers onboard during flight or pre-flight activities cannot be complied with.

4. All inquiries must be accompanied by a stamped, self-addressed envelope.

5. Requests for service must be received at least five days prior to an event, but no earlier than 30 days before.

6. Requests should be sent to: Chief, Mail and Distribution Services, SI-SRV-1M, Kennedy Space Center, FL 32899.

7. There are no plans to provide cachet service (rubber stamp) for such major events as the first launch of the Space Shuttle.

8. Hand-back service by the KSC Post Office will not be provided.

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9. Since the KSC Post Office is open only on Monday through Friday, excluding legal holidays, we cannot cancel envelopes on Saturday or Sunday.

10. Cancellations for minor tests cannot be given because we do not have access to these schedules.

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NASA News

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KSC NEWS RELEASE NO. 261-80

SHUTTLE INTERFACE TEST ENTERS SECOND WEEK

KENNEDY SPACE CENTER, FL.-- The Space Shuttle's first major test as an integrated flight system is in its second week in the Vehicle Assembly Building and flight crew members are to enter the Columbia's cabin this weekend to begin a series of flight simulations.

The Shuttle Interface Test began at 2 a.m. on December 4 and has continued around-the-clock since that time. The Space Shuttle Orbiter Columbia was moved to the Vehicle Assembly Building for mating with the shuttle's other elements - the external tank and solid rocket boosters - on a mobile launcher platform on November 24.

The test will run for more than two weeks and is designed to check out the mechanical and electrical connections between the various elements and the functioning of onboard flight systems.

Shuttle interfaces and individual systems have undergone extensive testing during the past week, including the mobile launcher platform/orbiter liftoff umbilicals, external tank tumble system and the calibration of the orbiter's inertial measurement unit.

The orbiter's main engine nozzles were gimbaled and atmospheric flight control surfaces such as elevons, rudder/speed brake and body flap were moved to check clearances. The orbiter's auxiliary power units were not activated for this test; hydraulic power was provided by ground units in the VAB.

Checkout entered the integrated stage early on the morning of December 10 with the shuttle flight control integrated test. This test is designed to verify the ability of the orbiter's onboard computers to steer the solid rocket boosters during the ascent into orbit. The boosters are steered by hydraulically moving the solid motor nozzles.

Prime crew astronauts John Young and Bob Crippen and backup crewmen Joe Engle and Richard Truly are to participate in a series of flight

-more-

simulations scheduled to begin late Sunday afternoon, December 14.

These simulations are of ascents to orbit, return to launch site and single orbit aborts, and descents from orbit to landing. These tests are designed to validate primary and backup computer programs for the onboard flight system.

The T-zero for the first simulation is tentatively scheduled for 7 p.m. Sunday, December 14, the second 16 hours later and the remainder of the runs will be scheduled at 12 hour intervals.

Although the crew participation has not yet been firmed up, it is likely that Engle and Truly will be at KSC on December 13-14, Young and Crippen on December 15-16. The crews will alternate as permitted by their training assignments at the Johnson Space Center in Houston, Texas.

The thermal protection system work left open from the Orbiter Processing Facility has been resumed in the Vehicle Assembly Building. In excess of 2,000 gap fillers are being inserted between the TPS tiles and this work should be completed with no impact on a scheduled rollout from the VAB to Pad A in late December.

In addition, 24 tiles located in various positions on the orbiter are being replaced. Ten of these were damaged during the move to the VAB or during mating operations; 14 tiles are being removed to be reconfigured to meet step and gap requirements.

In other shuttle-related activity during the week, the payload cannister which will be used to transport shuttle payloads around the various KSC facilities is undergoing testing.

The cannister, with two dummy payloads installed, was hoisted to the vertical position on top of the cannister transporter in the VAB and moved to the pad on December 9. On December 10, engineers began testing procedures which will be used at the pad's Rotating Service Structure to hoist the cannister, attach the Payload Ground Handling Mechanism and move the dummy payloads into the Rotating Service Structure and lower the cannister back down on the transporter.

The first Space Shuttle payload - OSTA-1 - has been moved from the ATM Clean Room in the Operations & Checkout Building and placed in the Cargo Integration Test Equipment (CITE) stands in the O&C high bay. Reinstallation of seven Earth resources-type experiments is being done in preparation for a major experiments/pallet interface test in February.

Two of three shipments containing the Spacelab engineering model have arrived at KSC. The third shipment will arrive December 13.

KSC NO. 261-80

The engineering model is designed as a "pathfinder" to verify the equipment and procedures which will be used to process the flight unit, scheduled for the first Spacelab mission in 1983.

The engineering model consists of a habitable module, pallets, handling equipment, documentation and computer software.

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KSC Release No. 262

FORMER ARKANSAS CITY RESIDENT RECEIVES NASA SERVICE AWARD

KENNEDY SPACE CENTER, Fla.- John P. Ruf, a 1950 graduate of Arkansas City High School, Arkansas City, Kan., was honored during an awards ceremony at NASA's John F. Kennedy Space Center recently for completing thirty years of government service.

Ruf is a safety specialist at KSC and is responsible for safety monitoring and supervision at Launch Complex 39's Pad A. Pad A is undergoing final preparations to support the launch of the Space Shuttle. The launch site for all of the lunar landing missions, Pad A has been reconfigured for launch of the Shuttle.

After graduation from Arkansas City High School, Ruf entered the U.S. Air Force, serving for twelve years. He reached the rank of staff sargeant, and in 1958 was chosen to work in the Strategic Air Command Missile Program. He began working at the Kennedy Space Center in 1967.

Ruf lives in Cocoa, Fla., with his wife Pamlyn. The Rufs have three sons, John, William and Robert.

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Ann Skinner
305-867-2468 (Office)
305-784-3103 (Home)

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KSC NEWS RELEASE NO. 264-80

## CITRUS GROWERS CAN "SPY" ON TREES' HEALTH

KENNEDY SPACE CENTER, FL.-- The same technique used to detect fake trees used as camouflage during World War II can be used by citrus growers to detect unhealthy trees in their groves without tedious ground inspection.

Florida citrus growers can use infrared aerial photography effectively to inspect and monitor their groves, according to a study just completed by the Institute of Food and Agricultural Sciences of the University of Florida and NASA.

IFAS and NASA will publish early next year a "how-to" guide for growers to encourage increased use of color infrared photography to spot problem areas in groves -- such as diseased or dead trees, overgrown vines, wet or dry ground conditions, or broken or malfunctioning sprinklers.

In addition, IFAS, through the Florida Cooperative Extension Service, will run workshops through the state to explain the benefits of a photo inventory of a grower's holdings and to teach the techniques of planning photo missions and of interpreting "false color" infrared transparencies. The workshops will be scheduled in Gainesville, Cape Canaveral, Monticello, LaBelle and Homestead.

Though aerial infrared photography to analyze ground vegetation is not new by any means, it has not been used by Florida citrus growers.

However, increasing costs of labor, restrictions on the use of pesticides, and pressure on water resources by increasing populations around groves require that grove managers have the most complete possible information to make decisions on inventory and resources.

"Years ago, growers used to inspect their trees once a year," said Dr. Carlos Blazquez, IFAS resident investigator. "If you have 10 acres, it's easy to keep track, but 500 acres is a different ball game."

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Dr. Blazquez and Frank Horn, Jr., project manager for the Advanced Planning and Technology Office of NASA's Kennedy Space Center, are co-authors of the study.

Aerial infrared inspection and analysis, for example, can help a grower to make an accurate estimate of the numbers of trees that should be ordered for replacement over a two-year period, Horn said.

A replacement order that is too small in the first place results in additional cost to the grower if he must increase it later and pay a higher price per tree, Horn pointed out.

Even the preliminary process of assembling grove maps to plan the photography can have benefits; one grower in the initial study discovered that he had been paying taxes on 500 acres that were not his.

The photos can also be used to document loss of production and loss of trees for tax purposes.

A key to successful use of infrared photos is the training in interpretation of the color transparencies.

Infrared film works by reacting to electro-magnetic radiation, which has wave lengths greater than those of visible light but shorter than microwaves. The resulting pictures show the subject in unnatural colors but enable the interpreter to make fine distinctions among different kinds of vegetation and its condition.

The IFAS-NASA study found that the best time to photograph the groves is in spring when the trees are producing flowers and young leaves. The difference between healthy and stressed trees is most apparent then. The study recommends photography with a 12-inch lens from 4,000 feet. On the resulting transparencies one inch equals 333 feet.

Healthy trees will appear a bright reddish magenta, but trees under stress that affects their foliage will be a paler tint. A tree that is not producing new foliage but only has old leaves at the crown will appear a light bluish purple. Dead or missing trees show up as gaps in the rows.

To begin interpreting the transparencies, the analyst first isolates a frame showing trees that are known to be healthy. Their color on the film is then used as the standard for all the trees being surveyed.

Dr. Blazquez said that the best interpreters in the study proved to be those who were already familiar with citriculture. He also said that the interpretations of the infrared transparencies must be spotchecked against actual ground conditions. The study stresses that while photography can reveal problems it cannot diagnose them precisely.

It is also possible to computerize information gained from photography analysis, Horn said.

A prototype computer program has been developed to produce total counts for each classification group -- grove, block, row, tree, number or beds; to produce a list of exact locations of all trees and to show all tree conditions.

The use of minicomputers or microprocessors makes it possible also, for example, to pinpoint the exact locations of all trees and to show all tree conditions.

The use of minicomputers or microprocessors makes it possible also, for example, to pinpoint the exact locations by row and tree of trees in a particular classification group. Crop production can also be forecast by associating the numbers of trees in various classifications with past production records.

According to Dr. Blazquez and Horn, growers who participated in the initial study were enthusiastic about the results they received from photointerpretation.

Participants in the demonstration project were American International Food Corporation of Arcadia, Callery Judge Grove of West Palm Beach, Caulkins Groves of Indiantown, Cloud Grove of Ft. Pierce, Royal Palm Cultivation Corporation of West Palm Beach and Southern Citrus Nursery of Polk County.

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NOTE TO EDITORS: Color art to illustrate is available on request.

IF.5 #17

# NASA News

National Aeronautics and
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KSC NEWS RELEASE NO. 268-80

## FLIGHT SIMULATIONS CONDUCTED AS SHUTTLE INTERFACE TEST NEARS END

KENNEDY SPACE CENTER, Fl. -- The Shuttle Interface Test which began December 4 is nearing an end. The test is being conducted in the Vehicle Assembly Building where the orbiter Columbia was moved for mating with the external tank and solid rocket boosters on November 24.

The test is the first major checkout of the Space Shuttle as an integrated flight system and its closing days entail a series of four simulated missions involving the prime and backup crews for the first Space Shuttle mission.

Backup astronauts Joe Engle and Dick Truly were aboard Columbia at 9:30 a.m. Wednesday, December 17, for a simulated liftoff and return to launch site abort which ended in a mock landing on KSC's Shuttle Landing Facility 24 minutes after liftoff.

Two simulations remain -- another return to launch site abort and a normal reentry and landing from orbit.

The simulations are designed to validate primary and backup computer programs to be used by onboard flight systems during the STS-1 mission scheduled for no earlier than March, 1981.

The last two simulations are scheduled for completion on Thursday, December 18. The SIT is to end late this week following the completion of the mission simulations, stray voltage checks and other windup activities.

In other shuttle related activity, the processing of gap fillers and tile work is continuing. The reinstallation of 24 thermal protection system tiles removed for various reasons should be completed by Sunday, December 21, and gap filler work scheduled for the VAB should be completed by Tuesday, December 23. A minimal amount of gap filler work will remain to be completed after the Space Shuttle is transferrd to Pad A at Complex 39.

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Gap filler work to be carried to the pad is centered about the aft end of the orbiter and work areas will be easily accessible.

At Pad A, Launch Complex 39, filling of the liquid oxygen storage tank is scheduled for completion during the afternoon of Wednesday, December 17. The tank has a storage capacity in excess of 900,000 gallons. Validation of the hypergolic fluids systems continues. Oxidizer work should be completed December 17 and validation of the fuel side of the system will begin immediately on completion of that phase of the work.

The dummy payloads inserted in the Payload Ground Handling Mechanism in the Rotating Service Structure earlier this week are to be reinserted into the payload canister and removed from the pad on December 17.

Solid rocket booster casing retrieval tests are being conducted this week by the UTC Liberty. The tests with the Ocean Test Fixture and nozzle plug began on December 15 and will continue through December 19. The test area is located approximately 30 miles east of Cape Canaveral.

The Liberty's sister ship -- the UTC Freedom -- remains at the shipyard at Fort George Island, Fla., and is to undergo sea trials on December 18-19.

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Frank Jarrett
SI
SI-SRV-1

IF.5 #17

# NASA News

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KSC NEWS RELEASE NO. 269-80

## KSC TO LAUNCH 10 MISSIONS ON EXPENDABLE ROCKETS IN 1981

KENNEDY SPACE CENTER, FL. -- Ten space missions, launched from NASA facilities on Cape Canaveral Air Force Station, are planned for 1981, an increase of four launches over this past year's relatively light launch schedule.

In addition to launches from NASA's East Coast launch facilities, three other missions will be conducted from facilities on the West Coast at Vandenberg Air Force Base -- two Delta launches and one Atlas-F. Atlas-F launches are performed by the Air Force with NASA providing a monitor-only role.

COMSTAR-D, a domestic communications satellite, will be NASA's first launch of 1981. It is scheduled for Feb. 19 on an Atlas Centaur rocket from Complex 36. COMSTARs are owned by the COMSAT General Corp. Three COMSTARs are currently operating in orbit. COMSTAR-D will handle domestic communications traffic from its operating position in geosynchronous orbit 22, 300 miles above the equator. The entire capacity of the COMSTAR satellite system is leased by COMSAT to the American Telephone and Telegraph Company.

INTELSAT V (F-1), the second spacecraft in a series of the largest and highest capacity communications satellites built to date, will be launched in March. NASA will launch four INTELSAT spacecraft in 1981 for the International Telecommunications Satellite Organization, a consortium of 105 member nations whose satellite system carries two-thirds of the world's overseas telecommunications services. An INTELSAT V satellite can transmit up to 12,000 two-way telephone calls and two TV channels simultaneously. This INTELSAT will be positioned in geosynchronous orbit over the Atlantic Ocean and will serve as an in-orbit spare.

GOES-E, a Geostationary Operational Environmental Satellite, will be launched on a Delta rocket from Complex 17 in March. GOES-E

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is the second in a series of three new weather watchers launched by NASA for the National Oceanic and Atmospheric Administration. These new GOES spacecraft not only have the ability to provide two-dimensional cloud cover photos--like those familiar to TV newscast viewers--but also can measure atmospheric temperatures and moisture at various altitude layers. This information is particularly valuable in predicting severe local storms and other short-term weather phenomena. GOES-E will begin its mission in geosynchronous orbit at 135 degrees W. Longitude, southeast of Hawaii.

SBS,the second in a series of Satellite Business System spacecraft, will be launched April 23 on a Delta rocket from Complex 17. SBS satellites serve the business communications needs of American companies. Launched by NASA for Satellite Business Systems, a private company sponsored by Aetna Life and Casualty, COMSAT General Corp. and IBM, SBS Spacecraft can provide integrated, all-digital, interference-free transmission of telephone, computer, electronic mail and video teleconferencing to SBS business and industrial clients.

FLTSATCOM E, the last of a series of five spacecraft which form a versatile military communications system, will be launched June 2 on an Atlas Centaur rocket. FLTSATCOM E will serve as an in-orbit spare. Shared by the Navy, Air Force and Department of Defense, the FLTSATCOM system provides reliable, secure communications for ships and submarines at sea, planes in the air, and military ground units throughout the world.

RCA-D, a domestic communications satellite, will be launched June 18 on a Delta rocket. This satellite is the replacement for the RCA-C, launched in December, 1979, that was lost in orbit when spacecraft controllers fired the on-board apogee kick motor to circularize its orbit 22,300 miles above the equator. Like its predecessor, RCA-D will be devoted to the cable TV industry. The 24-channel satellite will relay cable TV signals to stations in all parts of the United States.

INTELSAT V (F-3 and F-4) launches are scheduled on June 25 and September 17. These will be the third and fourth in the INTELSAT V series and will be launched on Atlas Centaur rockets. These INTELSAT Vs will be placed in geosynchronous orbit over the Indian Ocean. Nine INTELSAT V satellites will eventually span the world's three largest oceans--the Atlantic, Indian and Pacific. Each satellite is designed to operate for seven years.

RCA-C1,a domestic communications satellite identical to the RCA-D spacecraft launched earlier in the year, will be launched October 29 on a Delta rocket. This 24-channel spacecraft will also be devoted to the growing Cable TV industry and will be the fourth satellite in RCA's diversified commercial communications system.

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INTELSAT V (F-5) scheduled for launch on December 10, will be NASA's final launch for 1981.

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## 1981 NASA EXPENDABLE LAUNCH VEHICLE SCHEDULE

| DATE | MISSION | LAUNCH VEHICLE | COMPLEX | COMMENTS |
|---|---|---|---|---|
| Feb. 19 | COMSTAR D | Atlas Centaur 42 | 36-A | COMSAT General Corp.--commercial communications satellite |
| March | GOES-E | Delta 154 | 17-A | Geosynchronous Operational Enviromental Satellite-- weather satellite |
| March | INTELSAT V (F-1) | Atlas Centaur 56 | 36-B | International Telecommunications Satellite Organization-- commercial communications satellite |
| April 23 | SBS-B | Delta 155 | 17-A | Satellite Business Systems-- domestic business communications satellite |
| May | NOAA-C | Atlas-F | WTR* | National Oceanic and Atmospheric Administration--weather satellite |
| June 2 | FLTSATCOM-E | Atlas Centaur 59 | 36-A | Fleet Satellite Communications-military communications satellite |
| June 18 | RCA-D | Delta 156 | 17-A | RCA-domestic commercial communications satellite |
| June 25 | INTELSAT V (F-3) | Atlas Centaur 55 | 36-B | |
| July 31 | DE | Delta 157 | WTR* | Dynamic Explorer--NASA scientific satellite |
| Sept. 15 | SME | Delta 158 | WTR* | Solar Mesospheric Explorer-- NASA scientific satellite |

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## 1981 NASA EXPENDABLE LAUNCH VEHICLE SCHEDULE

| DATE | MISSION | LAUNCH VEHICLE | COMPLEX | COMMENTS |
|---|---|---|---|---|
| Sept. 17 | INTELSAT V(F-4) | Atlas Centaur 58 | 36-B | |
| Oct. 29 | RCA-C1 | Delta 159 | 17-A | |
| Dec. 10 | INTELSAT V(F-5) | Atlas Centaur 60 | 36-B | |

*Designates launches from NASA facilities at the Western Space and Missile Center, Vandenberg AFB, California. All other launches are from the NASA facilities at the Eastern Space and Missile Center, Cape Canaveral Air Force Station, Florida.

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IF.5 #17

# NASA News

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KSC NEWS RELEASE NO. 272-80

## LAKE WORTH FIRM WINS NASA TRANSDUCERS CONTRACT

KENNEDY SPACE CENTER, FL.-- Scientific Instruments, Inc., of Lake Worth, Fla., has been awarded a $55,749 contract by NASA's John F. Kennedy Space Center to supply transducers.

Under the fixed-price contract, Scientific Instruments will supply transducers for use in KSC's Launch Complex 39, where the Space Shuttle is prepared for flight and launch.

Transducers are measuring devices which monitor the liquid level and temperature of liquids and gases used in ground equipment supporting Shuttle launch.

Scientific Instruments will supply the transducers as required for a period of 210 days.

The Kennedy Space Center is the primary launch and recovery site for the reusable Space Shuttle, scheduled to begin manned test flights in March, 1981. The Space Shuttle is a revolutionary new transportation system designed to provide routine and economical access to and from space for commercial, scientific and defense needs.

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KSC NEWS RELEASE #273-80

## SPACE SHUTTLE RUNWAY AVAILABLE FOR SANTA'S EMERGENCY USE

KENNEDY SPACE CENTER, FL.--Neither sleet, nor hail, nor rain nor snow should stay Santa from his appointed rounds in Florida on Christmas Eve.

But the Kennedy Space Center's Shuttle Landing Facility stands open for an emergency landing by Old Saint Nick should the Florida weather stray from the high standards set by the chamber of commerce or if one of his reindeer throws a shoe.

The Spaceport's shuttle landing strip is one of the largest airfields in the world--measuring 15,000 feet long and 300 feet wide. Designed to handle landings by the Space Shuttle orbiters on high-speed glides from missions in space, it is equipped with sophisticated electronic landing systems capable of overcoming the toughest set of weather conditions.

"We can handle the shuttle, C-5A, 747s--anything with wings," emphasized Joey Noel, pro tem manager of the Spaceport's shuttle facility. "We're sure we can handle Santa, his sleigh and his reindeer.

The shuttle strip's microwave scanning beam landing system (MSBLS) would handle Santa's landing during final approach and Noel noted that Santa's elves had conducted several trial landings on recent evenings using newly-installed MSBLS flight units on his sleigh.

"Santa's safe," stressed Noel. "He could land through mushroom soup using that system."

The shuttle landing field crew expects to receive Christmas at home but they're missing no bets. "We're hanging out stockings and leaving cake and soft drinks just in case he makes a stop," said Noel.

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KSC NEWS RELEASE No. 274-80

PLAYALINDA BEACH TO REMAIN OPEN UNDER NEW RULES

KENNEDY SPACE CENTER, FLA. -- The first assembled Space Shuttle will be moved to Complex 39's Pad A no earlier than Monday, December 29, but Playalinda Beach on Canaveral National Seashore will remain open for public use.

Public access, however, will be subject to new controls while STS-1 and subsequent vehicles are on the pad.

Effective at daybreak on rollout day, a new control gate will be in place on Florida Route 402 approximately three quarters of a mile east of the Wilson Interchange on Florida Route 3.

All vehicles will be required to stop at this point, where their occupants will be advised that they are entering a security area and that stopping or parking before reaching the beach parking area is prohibited. A patrol vehicle will be on the road at all times to enforce this provision. In addition, all vehicles are subject to inspection.

These provisions will be in effect while the space vehicle is on the pad.

It will be necessary to close Florida Route 402 to all traffic when hazardous operations are being conducted on the pad prior to the first launch.

Signs will be in place near the KSC boundary east of Titusville to inform the public of these closure periods and news releases will be issued as required to advise the public of closure plans.

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# NASA News

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KSC NEWS RELEASE NO. 275-80

## FINAL PREPS UNDERWAY FOR STS-1 MOVE TO LAUNCH PAD

KENNEDY SPACE CENTER, FL. -- Final preparations are underway for moving the Space Shuttle vehicle from the Vehicle Assembly Building to Launch Complex 39's Pad A. The move is scheduled for Monday, December 29.

Stacking of the first Space Shuttle vehicle was completed with the mating of the Orbiter Columbia to the other Shuttle components - the external propellant tank and solid rocket boosters - on November 24 in the VAB's High Bay 3.

Extensive tests have been conducted on the STS-1 vehicle to verify the various mechanical and electrical connections between the Shuttle's flight elements and the ground support systems used to checkout, fuel and launch the Shuttle.

Another major test was also performed - the Shuttle Interface Test - which was the first large-scale checkout of the Space Shuttle as an integrated flight system. The SIT included four simulated missions involving the prime and backup crews for the first Shuttle flight. The simulations were conducted to validate primary and backup computer programs to be used by onboard flight systems during the STS-1 mission, scheduled for no earlier than March, 1981.

The Shuttle Interface Test ended on Dec. 19 with the completion of the last simulated flight, a descent from orbit to a make-believe landing at the prime landing site for the first shuttle flight, Edwards Air Force Base, California.

With the SIT finished, ordnance work began. Ordnance includes all the explosive devices installed on the STS-1 vehicle which are used to separate various components - such as the solid rocket boosters and external tank - from one another during the flight. Installation and checkout of ordnance was completed December 23.

Columbia is scheduled to be powered down at midnight on December 23, following final closure between the external tank and twin solid rocket boosters, calibration of the Inertial Measurement Unit and installation and retest of the Input/Output Processors, part of the orbiter's General Purpose Computers.

One of the orbiter's navigation systems, the IMU provides data

to the orbiter's computers about the vehicle's attitude, position, acceleration and velocity. In orbit, the IMU is aligned using celestial navigation instruments.

The IOPs were removed following the completion of the SIT and improvements made in the reliability of the units. Reinstallation and retest is in progress. The IOPs are the parts of the orbiter's data processing system that translate information from the vehicle's central processing unit into commands which they relay to the vehicle systems.

Processing of gap fillers and tile work is continuing. The re-installation of 4 thermal protection system tiles removed for various reasons is scheduled for completion December 24, and gap filler closeout work required prior to rollout is scheduled to be completed by Dec. 27. A minimal amount of gap filler work will remain to be completed after the Space Shuttle is transferred to Pad A. Gap filler work to be carried to the pad is centered about the aft end of the orbiter and work areas will be accessible.

In preparation for the move, one of two Crawler-Transporters at KSC was moved from its park site to the east side of the VAB in front of High Bay 3. On Sunday, December 28, the crawler will be moved inside the VAB and positioned underneath the Mobile Launcher Platform.

Dismantling of all but essential access platforms in High Bay 3 is also underway.

A final review of VAB testing and Pad A status will be conducted by senior NASA management prior to rollout to verify all scheduled program objectives have been met and there are no constraints for the rollout to the launch pad.

In other Shuttle related activity work on the external tank needed to support the rollout is essentially complete. During the past week, the devices used to safe and arm the solid rocket booster igniters were installed, and valves that control the flow level of hydrazine into the SRB's thrust vector control system were replaced.

Solid rocket booster casing retrieval tests with the UTC Liberty were concluded. However, one of two dewatering nozzle plugs failed at various weld joints and broke into two pieces during the sea tests. The pieces were retrieved and a failure analysis team is investigating the problem.

Full-scale simulations of a Return to Launch Site abort were successfully conducted at the Shuttle Landing Facility. Hook up of critical ground support cooling and purge units to a mockup of the aft end of the orbiter were performed well within the 15 minute design criteria. The activities were to simulate convoy operations at the Shuttle Landing Facility in the event the orbiter returns to KSC for a landing on the 15,000-foot long runway shortly after liftoff.

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STS-1 ROLLED TO PAD, VALIDATION CHECKS BEGIN

KENNEDY SPACE CENTER, FL.-- The first Space Shuttle destined to fly in space was moved from the Vehicle Assembly Building to Launch Pad A at Complex 39 on Monday, December 29.

The Mobile Launcher Platform (MLP) was harddown on the pedestals at the pad at 8:01 p.m. after portions of a small steel access tower on the pad which provides egress from the second level of the MLP were removed.

Once in position, the Orbiter Access Arm was extended and crew module hatch opened. The Rotating Service Structure was also moved into place around the vehicle on December 30.

For the next week, activity at the Pad will be centered around the Shuttle Launch Pad Validation, a major test to verify connections between the Mobile Launcher Platform and ground systems at the Pad. All interfaces between the MLP and the Pad to supply power, propellants, gas, communications and water to the Shuttle are being made. Also, sophisticated Launch Processing System equipment in the Launch Control Center is being hooked up to the STS-1 vehicle so that power can be applied and tests can be conducted. A series of extensive tests will be performed to verify the MLP is properly mated to the Pad and instrumentation onboard the Shuttle flight elements - the orbiter, external tank and twin solid rocket boosters - will also be checked to verify test data can be received back at the Launch Control Center.

The next major test after Shuttle Launch Pad Validation will be the "Plugs Out Overall Test" scheduled from January 7-15. During this test, all Pad ground support equipment will be disconnected to verify that all Shuttle systems can operate on internal power after liftoff.

The STS-1 vehicle is scheduled to be powered up December 30 to support retesting of four Multiplexer/Demultiplexers (MDMs) and the Input/Output Processors (IOPs). The MDMs and IOPs, part of the orbiter's complex avionics system, were removed prior to roll-out to enhance their reliability and will be reinstalled before

power is applied to the vehicle.

Most other Shuttle related work accomplished during the past week was in support of the rollout.

On the orbiter, the major activity has been the reinstallation of the MDMs and IOPs. All thermal protection system work has been completed except for insertion of gap fillers that will be installed at the Pad.

Some thermal insulation on the left side of the external tank was repaired in the VAB prior to rollout after receiving some minor damage during retraction of a work platform.

The schedule for repairing Nozzle Plug No. 2, which broke into two pieces during sea trials is being reviewed with the estimated completion date of the end of February. The requirement for a full-up sea retest is also being assessed.

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