Betty Johnson/John Lawrence
Johnson Space Center, TX
(Phone 713/483-5111)

RELEASE NO. 84-009
February 14, 1984

NASA ANNOUNCES PARTIAL CREW FOR SHUTTLE FLIGHT 51-K

JOHNSON SPACE CENTER, TX -- A partial list of crew members for the Spacelab D-1 mission (STS flight 51-K) has been released by the National Aeronautics and Space Administration.

This announcement names three crew members of an eventual eight-person crew. Mission specialists for 51-K will be Bonnie Dunbar, Ph.D., a native of Sunnyside, Washington, and Guion S. Bluford, Jr. (Colonel, USAF), of Philadelphia, Pennsylvania. One of the three-member flight deck crew will be pilot Stephen E. Nagel (Major, USAF), Canton, Illinois. NASA plans to have three-member crews share flight deck responsibilities on future Spacelab-type missions.

NASA will name the 51-K commander and another pilot at a later date, and announcement of the European crew members will also be made at a later date.

Spacelab D-1 is a dedicated mission purchased by the Federal Republic of Germany. It will involve significant materials science and life science experiments. This mission, scheduled for launch in September 1985, will be the third flight of the orbiter Atlantis and the fourth flight of Spacelab.

The 51-K mission will be the second for Bluford, who served as mission specialist on STS-8 in August 1983. Nagel has also been selected to fly as a mission specialist on STS Flight 51-A in October 1984.

Both Bluford and Nagel were selected to the astronaut corps in 1978. The mission will be the first for Dunbar, a member of the group of 19 astronauts selected by NASA in May 1980.
SPACE STATION OFFICE MANAGER NAMED

Neil B. Hutchinson today was named manager of the Space Station Program Office at NASA's Johnson Space Center.

Deputy manager is John W. Aaron. Both appointments are effective immediately, Gerald D. Griffin, JSC Director, said.

NASA Administrator James M. Beggs announced in February that JSC would be "lead center" for the agency's Space Station Program.

Hutchinson has been serving in a staff assignment to the JSC Director since his return in January, 1984 from a one year assignment at NASA Headquarters, Washington, D.C. where he was Director, Space Shuttle Operations Office in the Office of Space Flight.

Hutchinson joined NASA in 1962 and worked on the design and development of the Mission Control Center's Real Time Computer Complex. He served as a Flight Director for the final Apollo lunar landing mission, Apollo 17, for all three Skylab missions in 1973-74, for the Apollo-Soyuz Test Project in 1975 and for
Shuttle developmental and orbital test flights from 1977-81.

In addition to his flight control and flight director responsibilities, Hutchinson has served as Head of the Systems Logic and Processing Section, Assistant Chief of the Apollo Command and Service Module Systems Branch, Chief of the Guidance and Propulsion Systems Branch and Deputy Chief of the Flight Integration Office at JSC.

Aaron has been Chief of the Spacecraft Software Division at JSC since 1981. He also has served as Avionics Flight Software Project Manager for the Shuttle Approach and Landing Test and Orbital Flight Test programs, as Technical Assistant to the Chief, Spacecraft Software Division, and as Section Head for the Electrical Power, Sequential and Instrumentation Systems for the Apollo Command and Service Module. In addition to his organizational responsibilities, Aaron served as a flight controller responsible for vehicle systems operation on Gemini, Apollo and Skylab programs.

Hutchinson was graduated from Willamette University, Salem, Oregon, in 1961 with a degree in mathematics and physics. He worked at the U.S. Naval Weapons Laboratory in Dahlgren, Virginia as a mathematician from 1961 to 1962, when he joined the Manned Spacecraft Center (now the Johnson Space Center). Hutchinson is married to the former Karen L. Zollman of Wichita, Kansas. They reside, with their two children, in Clear Lake City, Texas.

Aaron received his degree in physics from Southwestern State College in Weatherford, Oklahoma and joined the Manned Spacecraft Center in 1964. He is married to the former Cheryl Hart of Vinson, Oklahoma. They reside, with a son, in Houston and have a daughter attending Texas A & M University.

# # #
ASTRONAUT T.J. HART TO LEAVE NASA

Astronaut Terry J. Hart, who operated the Space Shuttle's mechanical arm to retrieve the Solar Maximum Satellite on the most recent space flight, will leave NASA effective June 15 to return to private industry.

Hart, 37, who joined NASA as an astronaut candidate in 1978, will work in an engineering management position for the newly-formed Military and Government Systems Division of Bell Laboratories in Whippany, N.J. That division will produce large digital communications networks for government applications, Hart said.

A native of Pittsburgh, Pennsylvania, Hart is married to the former Wendy Marie Eberhardt of Warren, Pa. They have two children.

Hart received a bachelor of science degree in mechanical engineering from Lehigh University in 1968, a master of science degree in mechanical engineering from the Massachusetts Institute of Technology in 1969 and a master of science degree in electrical engineering from Rutgers University in 1978.

May 10, 1984
He entered active service with the Air Force Reserve in June 1969, and completed pilot training in December 1970. He has logged over 3,000 hours flying time.

Hart was named a NASA astronaut candidate in January 1978. In August 1979, he completed the training and evaluation period and became eligible for assignment to Space Shuttle flights as a mission specialist.

He was a member of the astronaut support crews for missions 1, 2, 3, and 7, serving as Capcom in Mission Control for those flights.

His only space flight was STS 41-C, April 6-13, 1984, which retrieved and repaired the Solar Maximum Satellite, returning it to useful service in the first demonstration of the Space Shuttle's on-orbit repair capabilities. During this mission the crew, commanded by Capt. Robert Crippen, also successfully deployed the Long Duration Exposure Facility which will orbit until retrieved early in 1985 by another Shuttle flight.

# # #
NOTE TO EDITORS: 41-D PREFLIGHT BRIEFING SCHEDULED

A mission overview briefing and flight crew news conference for Space Shuttle flight 41-D will be held Friday, Aug. 17, at the NASA Johnson Space Center in Houston.

Lead flight director Randy Stone will review mission events and goals at a 11 a.m. (EDT) briefing in Bldg. 2, Room 135.

The astronaut crew for 41-D will hold a news conference beginning at 1:00 p.m. (EDT) in the same location.

# # #
NASA SELECTS CONTRACTORS FOR ORBITAL MANEUVERING VEHICLE STUDY

An Orbital Maneuvering Vehicle (OMV) to ferry satellites about in space came closer to reality today when NASA selected LTV Aerospace and Defense Company, Dallas, Tex.; Martin Marietta Denver Aerospace, Denver, Colo.; and TRW Inc., Redondo Beach, Calif., for negotiations leading to contracts for System Definition Studies.

The OMV would extend the reach of the Shuttle to about a thousand miles above the Earth.

The contracts, to be negotiated and managed by NASA's Marshall Space Flight Center, Huntsville, Ala., will be on a fixed-price basis, twelve months in duration, with the combined dollar value of the three contracts approximating $5 million.

Upon approval to proceed with the construction of an OMV, proposed for a first launch about 1990, NASA anticipates that one of the companies from those involved in the definition studies would be chosen to build the flight hardware.

The vehicle would supplement the present Space Transportation System, the heart of which is the Space Shuttle. The OMV would have the ability to retrieve satellites from high orbits and bring them back to the Shuttle for maintenance and repair.

The OMV would then place the repaired satellites back into their operational orbits. The OMV would also serve as a means of reboosting satellites as their orbits gradually decayed, thus avoiding costly, dedicated, Shuttle missions.

- more -
As presently envisioned, the OMV would be a remotely-piloted unmanned spacecraft approximately 15 feet (about 3 meters) diameter and 3 feet (about 1 meter) in length. The life of the vehicle would be approximately 10 years with refurbishment. On-orbit maintenance would be included in the design.

As currently conceptualized, the OMV initially would be deployed from the Shuttle for short duration missions; later it would remain in orbit for extended periods of time for use in both Shuttle-based and Space Station-based missions. Its role in support of a future Space Station program is viewed as one of the OMV's essential attributes. The vehicle is expected to be available for assembly and buildup of an initial Space Station, proposed by NASA to be built in the early 1990s. The OMV would then become an essential element of Space Station operations.

Proposals were also received from Boeing Aerospace Company, San Diego, Calif.; Lockheed Missiles and Space Company, Calif.; and Rockwell International, Downey, Calif.
NEWS RELEASE 84-16

DATE: September 11, 1984

FOR IMMEDIATE RELEASE

CONTACT: Elizabeth K. Vieira
Director of Community Relations
268-6110

Jess Parrish Memorial Hospital (JPMH) And Kennedy Space Center (KSC) renewed KSC's medical emergency agreement, Tuesday, August 14. The agreement re-affirms the hospital as their primary medical care facility for the astronaut crew, ground support personnel and KSC visitors, in case of a launch or landing accident.

Signed by KSC Director Richard G. Smith and JPMH Executive Vice President Richard A. Lind, the 2-year agreement outlines the duties and expectations of the hospital should a Space Shuttle emergency occur during that period.

The helipad, designed specifically for transport helicopters' use, is optimally located near the hospital's emergency entrance. Emergency Department physician Luis Quintero, M.D. said that nurses and technicians from the emergency department will be prepared to transport the astronauts immediately to the emergency room, within seconds of arrival time.

The emergency department, KSC, and the hospital staff work together during an emergency. In order to coordinate and carry out the responsibilities of all three entities, simulated "Disaster Drills" are practiced at least two times a year. Surrogate astronauts with assigned injuries arrive at the helipad where medical personnel are standing by. They are then brought to the emergency department and are treated as if their injuries are real.

-more-
During an actual Shuttle disaster, physicians specializing in emergency medicine and all available personnel will be on call to provide the injured immediate care, said Quintero. This "trauma team" will be equipped with an adequate supply of blood for all possible astronaut casualties, prepared by the hospital prior to each space mission.

Hospital Executive Vice-President Richard Lind explains why Jess Parrish was chosen to play an important role in the space missions. "We like to think we were chosen because of our completeness of services, our accessibility, our facilities, our helicopter rescue service, our emergency department size, and above all, our excellent staff of professionals".

-30-
EG & G AWARDED OPTION ON CONTRACT AS BASE OPERATIONS CONTRACTOR

KENNEDY SPACE CENTER, Fla. - NASA’s John F. Kennedy Space Center has awarded EG&G, Florida, Inc., of Cocoa, Florida, a $81,242,495 contract to begin its second year as Base Operations Contractor at KSC. This award is the first of two priced, one-year options on the initial contract, awarded in December 1982.

The cost-plus-incentive/award contract covers the period from January 1, 1984 through December 31, 1984.

As Base Operations Contractor, EG&G is responsible for institutional and certain technical support services previously provided by 13 different contractors at KSC. The contract covers such functions as administrative services, facilities, utilities, technical operations, and health and safety services.

Remaining on the contract are one additional priced option for 1985 and seven unpriced one-year options, for a total potential contract period of 10 years.

The Base Operations Contract was the first of two comprehensive contracts to be awarded to strengthen the Space Transportation System launch function as the number of Space Shuttle launches increases over the next several years.

The second major contract, the Shuttle Processing Contract, was awarded to Lockheed Space Operations Company of Titusville, Fla., in September, 1983. The Cargo Processing Contract, which will consolidate all cargo operations at KSC, will be the last major contract to be awarded.

#       #       #

January 4, 1984
KENNEDY SPACE CENTER CONTINUES AS BIG DRAW FOR TOURISTS

KENNEDY SPACE CENTER, Fla. -- NASA's Visitors Center continues to be a big draw for people visiting central Florida, with 1983 attendance figures nearly matching those of the previous year. Estimates for next year are that the crowds may be even bigger at what is already one of the top three attractions in the state.

Figures for the past year show that nearly 1.5 million people took the nominally priced bus tour of the nation's space center, a figure only about one percent lower than the near-record numbers of 1982's attendance. An additional 25 to 30 percent of that total visited the free admission portion of the Visitors Center but elected not to take the bus tour.

Harry B. Chambers, Vice President and General Manager of TWA Services, Inc., the prime contractor for the Visitors Center, said, "We are very happy with the numbers of guests we are able to attract. Because we are on the periphery of the central Florida tourist attraction area, those people who come here do so because they really want to. Our results therefore compare very favorably with those other attractions."

NASA officials are optimistic that the record launch schedule, combined with a multi-million dollar expansion effort will draw even larger crowds to the Visitors Center in 1984. With a total of ten Space Shuttle launches and six other major rocket launches tentatively scheduled for 1984, the Space Center should gather a lot of attention this year, said Arnold Richman, Chief of the Visitor Services Branch of Public Affairs.

The expansion effort, totally funded by TWA Services, already has resulted in expanded food and souvenir services, and will feature two huge theaters opening in June. The back-to-back theaters include a 440-seat unit offering unique IMAX productions on a six-story tall screen. The primary IMAX film to be shown is the highly acclaimed "Columbia," which depicts the ground processing, launch preparation and actual launch of the Space Shuttle.

The other half of the theater unit will house a 500-seat special events theater in which space related productions will be held on stage. More familiar portions of the center will remain, many updated and modernized, including the Hall of History, Exhibits Hall and more. The Visitors Center is open every day of the year except Christmas and on Space Shuttle launch days.

January 8, 1984
THE SPACE SHUTTLE "DELIVERS" PAYLOADS

KENNEDY SPACE CENTER, Fla. - "We deliver," proclaimed the STS-5 crew after deploying the first two satellites ever to be carried into orbit via the Shuttle. On that mission, NASA's Space Shuttle proved that it can "deliver", and it is now fulfilling the promise of the nation's Space Transportation System by transporting payloads into space on a routine basis.

"We deliver" is now the name of the game. And as the Shuttle enters an operational phase in which a variety of versatile cargoes will fly aboard the spacecraft, the world's attention has shifted to these payloads.

Among the most interesting cargoes which the Shuttle will carry into space over the next few years are a giant telescope, scientific probes, an interplanetary spacecraft, known as Galileo, which will investigate Jupiter, and a spacecraft which will be hurled in toward the center of the Solar system to orbit the sun's polar regions.

-more-
There is also a free-flying satellite (Long Duration Exposure Facility) which will provide accommodations for experiments that require long-term exposure to the space environment, as well as many more communications and meteorological satellites.

In addition, depending on space available, individuals and groups outside the space community are allowed to fly small self-contained payloads aboard the Shuttle through the "Getaway Special" program, in which the payloads are loaded into small canisters and placed in the cargo bay of the orbiter.

**Cargo Preparation**

NASA conducts an assembly line operation to process these payloads. Typical operations include receiving, assembling, checking out and testing of the payloads, as well as servicing them with propellants and preparing them for integration with other payload elements as well as with the orbiter.

Payloads are received at the launch site in a near flight-ready condition, usually requiring only reassembly of large components such as antennas and solar arrays.

-more-
After assembly is completed, all of the payloads are tested individually to ensure that they are working properly. Cargoes are designated as "vertical" or "horizontal", depending on whether they are inserted into the orbiter while it is in an upright position at the launch pad, or in the Orbiter Processing facility while the spaceship is horizontal.

Before installation, however, a sophisticated collection of equipment, known as Cargo Integration Test Equipment (CITE), is used to test both vertical and horizontal cargo packages by providing high-fidelity simulations of the complex electrical connections between the Shuttle orbiter and the payloads.

The CITE facilities check such functions as spacecraft command and monitoring, power control from a remote ground station, computer sequencer connections, and ordnance systems.

Each of the test stands provide a simulated payload bay, and are supported by more than 30 racks of electronic and computer equipment, and over 800 cables of interlinking hardware elements for cargo to orbiter simulator connections.

-more-
The CITE control room, populated with consoles, minicomputers, and a recording and playback system, is located in the Operations (O&C) Building in the KSC industrial area. From here, CITE tests are monitored and controlled at two locations.

Testing of the horizontal cargoes, which includes such payloads as Spacelab (a reusable orbiting laboratory), Getaway Specials, and life sciences payloads, takes place at the O&C building. These payloads are installed in the orbiter while it is in a horizontal position at the OPF.

Vertical cargoes include automated satellites and spacecraft using upper stages. They are tested at the nearby Vertical Processing Facility (VPF). Since their installation generally involves hazardous operations, they are placed into the orbiter while it is in a vertical position at the launch pad.

**Upper Stage Checkout**

While payloads are being processed, the preparation of upper stages -- which is required by some of the satellites to help boost them into orbit above the Shuttle's nominal 184 statute-mile altitude -- takes place separately.

(more)
Currently, either the Payload Assist Module (PAM) or the Inertial Upper Stage (IUS) is used to support satellites which require upper stages.

The PAM-A is designed for Atlas-Centaur class payloads and the PAM-D is used to accommodate Delta payloads. The components for these stages, including their mounting cradles, are assembled in the Delta Spin Test Facility at Cape Canaveral Air Force Station (CCAFS).

The buildup of the IUS takes place in the Solid Motor Assembly Building at CCAFS Titan III Complex. The IUS is also used to support NASA's Tracking and Data Relay Satellite missions, among other cargoes.

After the upper stage has been assembled and tested, it is moved to the VPP for final mating with its payload, and then a final check is run again to ensure that the cargo elements are functioning properly.
Special Handling

Cargoes that fall into special categories -- such as Spacelab, life sciences payloads and Getaway Specials -- may vary from the standard flow of horizontally and vertically integrated payloads.

Spacelab payloads, for instance, are processed as horizontal payloads in the Spacelab Assembly and Test Area, located inside the O&C building. Experiments sponsored by the European Space Agency undergo preliminary integration in Europe prior to being shipped to the U. S.

After initial checkout, experiments which are to be exposed to the space environment are mounted on flat platforms -- known as pallets -- and those which will remain inside the pressurized Spacelab module are mounted on racks.

Simultaneously, the Spacelab module undergoes buildup, and when buildup is complete, the pallets and racks are arranged in the payload configuration workstand inside the module. Utilities are then connected, checked out, and tested.

-more-
Getaway (GAS) Specials are received and assembled in the GAS Processing Facility at CCAFS. The small self-contained payloads are placed in individual canisters, attached to a bridge beam in the orbiter, and placed in the payload bay of the spaceship in the OPP.

Since Getaway Specials have limited interfaces with the orbiter, none of them require processing through the CITE facility.

Like Spacelab and Getaway Specials, flight elements associated with life sciences cargoes will generally follow the flow for horizontally integrated payloads.

Animal and plant specimens classified as life sciences payloads are received at Hangar 'L' at CCAFS.

Live specimens, such as microorganisms, cells, and animals, are cared for and kept in flight containers at the hangar, and are inserted into the orbiter's cargo bay at the latest possible time prior to liftoff.
Hangar L is operated, maintained, and managed by KSC.

Department of Defense payloads which are launched from KSC are handled and loaded under the direction of DOD.

Orbiter Installation

After horizontally and vertically integrated payloads have successfully completed the CITE tests, each of the packages is loaded into a protective, environmentally-controlled canister/transporter.

They are then hauled to the point where they will be installed in the orbiter's 60-foot-long by 15-foot-diameter payload bay -- which can carry four or five primary payloads at once -- depending on weight, mass and configuration.

Horizontal payloads are the first to be installed, while the Shuttle orbiter is in the OPF. Here, the orbiter also undergoes preflight processing simultaneously as the two cargo packages are being readied for flight.
Once inside the OPF, the cargo is removed from its canister/transporter with a strongback and facility crane, positioned over the orbiter, and then lowered and secured in the payload bay. The tedious process of connecting and verifying connections between the cargo and the orbiter then begins.

When testing in the OPF is complete, the orbiter's payload bay doors are closed and latched, and the spacecraft is powered down for its move to the neighboring Vehicle Assembly Building (VAB).

There, the orbiter is hoisted into a vertical position and mated with its external tank and solid rocket boosters -- the other elements which make up the Space Transportation System -- and placed atop the Mobile Launcher Platform (MLP). This platform holds all the Shuttle elements together during assembly, transportation to the pad, and launch. The horizontal payloads sit undisturbed in the Shuttle's cargo bay during its stay at the VAB.

The spacecraft is then readied for yet another move, the three-and-one-half mile, snail's pace journey to the launch pad.
Once at the pad, the T-0 umbilicals are connected to supply power to the spacecraft, and the last of the total cargo package elements -- the vertical payloads -- are inserted into the orbiter's cargo bay.

Either before or soon after the Space Shuttle arrives at the launch pad, the vertical payloads which will be flown aboard the spacecraft are transported to the pad in the canister/transporter.

The canister is then positioned, hoisted and mated with the Payload Changeout Room (PCR) of the Rotating Service Structure (RSS), a huge workstand platform which surrounds the spacecraft and provides access for work crews.

An inflatable seal which bridges the canister and the RSS allows both the canister and the PCR doors to be opened while environmentally-controlled conditions are maintained in both.

The Payload Handling Mechanism (PGHM), located inside the PCR, is moved forward, like a giant arm, to remove the entire cargo.

-more-
The cargo package is then raised and removed from the canister, and transferred into the PCR by moving the PGHM along its overhead rail support to the rear of the PCR, where the payloads undergo final preparation for installation into the orbiter.

Again, using the PGHM system, the cargo is electrically and mechanically connected with the orbiter. Cargo-to-orbiter connections, previously checked through simulation using the CITE facility, are verified again.

Final checkout of major spacecraft systems then begins. Orbiter and cargo integrated tests are performed to ensure that all is ready for flight. When all flight systems are "go", the spacecraft's cargo bay doors are closed for flight.

With the horizontal and vertical payloads installed to make a total cargo package, the Space Shuttle is now ready to deliver its payloads into space.
The KSC launch team's sophisticated, assembly-line approach to the processing of Shuttle orbiters supports "two-in-flow" testing, which allows for the simultaneous processing of two orbiters in the OPF, and so -- as one mission culminates -- another has already begun.

"We deliver," the theme of the STS-5 mission, can now be deemed the motto of the Space Shuttle Program, for as the demand for space aboard the Shuttle continually increases, the payloads will remain the mainstay of the program. And KSC's assembly-line concept in processing these payloads for flight is essential in tightening turnaround time between launches as the number of Shuttle flights increases each year.

M. Konjevich
SI
SI-SRV-1

February 1, 1984
LONG DURATION EXPOSURE FACILITY TO BE SHOWN

KENNEDY SPACE CENTER, Fla. -- The Long Duration Exposure Facility, primary cargo for Space Shuttle Mission 41-C, will be shown to reporters and photographers February 10. Mission 41-C is set for launch on April 4.

The showing will be conducted in two parts. First, a press conference and question and answer session at the Complex 39 Press Site Conference Room will feature LDEF project officials. This session will begin at 10 a.m. EST, and will be televised live, one-way to other NASA centers. The session is planned so as not to interfere with ongoing Mission 41-B activities.

Immediately following the conference session, photographers and reporters who wish will be taken to the payload processing facility where LDEF is being prepared for launch. This portion of the showing is primarily for photography. Transportation will be provided.

Reporters with Mission 41-B press accreditation may proceed directly to the Press Site for the conference. Others should call 867-2468 in advance of the conference to arrange for temporary access.

February 7, 1984
MISSION 41-B POST-FLIGHT PRESS CONFERENCE SET FOR FEB. 21

Kennedy Space Center Fla.-- A post-flight press conference with Space Shuttle mission 41-B astronauts Vance D. Brand, Robert L. Gibson, Bruce McCandless II, Ronald E. McNair, and Robert L. Stewart, will be held at 2 p.m., EST on Tuesday, Feb. 21, in Building 2, Room 135 at the Johnson Space Center Newsroom.

The conference may be covered from the Kennedy Space Center. The crew conference will be telecast with two-way audio set up for a question and answer opportunity.

The news conference will also be available over the V-2 Circuit which can be obtained by calling the KSC operator at 305/867-7110 and asking to be patched in to the V-2 Circuit.

Reporters with permanent NASA press credentials may proceed directly to the press site. Those without credentials must call the News Center at 305/867-2468 to arrange for access.

# # # # Feb. 14, 1984
M. Kojevich
SI
SI-SRV-1
BIDS REQUESTED FOR KSC SERVICE STATION OPERATION

KENNEDY SPACE CENTER, FLA.—The Kennedy Space Center Exchange Council today released a request for proposals for concessionaire operation of a commercial service station on the Center.

Located in the KSC industrial area, the station has two islands with a capability of simultaneous fueling of four or more vehicles, and three service bays for vehicle lubrication, oil change and repair service.

The request for proposal provides for submission of sealed offers by April 20, 1984. The concessionaire contract will cover the period from July 1, 1984 through June 30, 1989.

Co-Op Oil Co., St. Petersburg, has operated the service station since 1978.

Requests for proposals were mailed to 16 area business firms. Other firms interested in receiving proposal requests may obtain a copy and additional information from Andrew Haugevik, 867-7208.

The Exchange Council is a non-appropriated fund activity operated for the welfare and morale of KSC employees.

February 29, 1984

# # # # #
POLYGENERATION PLANT COULD SAVE MILLIONS FOR SPACE SHUTTLE

KENNEDY SPACE CENTER, Fla. - A polygeneration plant which would produce liquid hydrogen, gaseous nitrogen and electricity could save from $750,000 to $1 million dollars for each launch of the Space Shuttle.

The results of a recent study indicate such a plant would be a cost-effective way of fulfilling the operational requirements for the Space Shuttle, particularly through the on-site production of the liquid hydrogen, used mainly as fuel for the orbiter's main engines, said Peter Minderman, Director of the Engineering Development Directorate at the Kennedy Space Center.

Cost savings would also come from a reduction in transportation fees KSC now pays for the liquid hydrogen, which is now trucked to the center from a natural gas plant in Lousiana; through the use of coal as a feedstock for the plant; through the generation of electricity needed to liquify the gaseous hydrogen, and in the use of surplus electricity from the plant at KSC. The plant would enable KSC to produce all of its own electricity for the center, which is now purchased through a utility plant.

The study of the economic and technical feasibility of constructing the plant, and the development of two detailed engineering concepts using different coal gasification processes were done by the Scientific Design Company of New York City, under a seven-month contract, awarded in March 1983.

The findings of the study are being presented to NASA Headquarters and a final decision about whether or not to proceed with the project will be made by NASA Administrator James Beggs later this year.

-more-
Gary Gutkowski, NASA project manager for the proposed plant, said the present delivered price for liquid hydrogen is about $1.47 per pound, and the Shuttle uses about 220,000 pounds of liquid hydrogen for each launch.

During the polygeneration process, coal would be gasified to produce a medium energy gas composed primarily of carbon monoxide and hydrogen. The hydrogen would then be separated from this gas stream, purified and then liquified. The remainder would be burned in a gas turbine to produce electricity.

Steam produced by the gasification process would be converted to electricity as well.

The gasification process requires large amounts of oxygen which would be produced by an air separation plant which will manufacture pure gaseous nitrogen as a by-product. Gaseous nitrogen is used as a purge gas in many operations at KSC.

March 15, 1984
ST. AUGUSTINE FIRM AWARDED RAILROAD CONTRACT

KENNEDY SPACE CENTER, FLA.—NASA's John F. Kennedy Space Center has awarded Railroad Track Construction Corp., St. Augustine, Fla., a $1,224,653 contract to maintain the space center's railroad system.

Under the terms of the contract Railroad Track Construction is responsible for the maintenance, repair and replacement of the signals, switches, rails and ties that constitute the Space Center's 42 miles of railroads.

Rail transportation at Kennedy Space Center is conducted by EG&G Inc., and consists of the relocation of Space Shuttle solid rocket booster segments as well as other Space Shuttle and industry related hardware.

The cost plus fixed fee award formalizes a letter contract initiated in the fall of 1983. The one-year contract covers the period from Oct. 10, 1983 to Oct. 9, 1984 and includes an option for a one-year extension.

The Kennedy Space Center is NASA's prime launch and landing site for the Space Shuttle, scheduled for its twelfth flight no earlier than June 19, 1984.

# # # # # April 18, 1984
MISSION 41-C POST-FLIGHT PRESS CONFERENCE SET FOR APRIL 24

KENNEDY SPACE CENTER, FLA.--A post-flight press conference with Space Shuttle mission 41-C astronauts Robert Crippen, Richard Scobee, Terry Hart, George Nelson and James van Hoften will be held at 2 p.m., EST Tuesday, April 24 in Building 2, Room 135 at the Johnson Space Center Newsroom.

The conference may be covered from the Kennedy Space Center. The crew conference will be telecast with two-way audio set up for a question and answer opportunity.

The news conference will also be available over the V-2 Circuit which can be obtained by calling the KSC operator at 305/867-2468 and asking to be punched into the V-2 Circuit.

Reporters with permanent NASA credentials may proceed directly to the press site. Those without credentials must call the News Center at 305/867-2468 to arrange for access.

# # # # #

April 19, 1984
FAIRCHILD WESTON AWARDED CONTRACT FOR LAUNCH EQUIPMENT SYSTEM

KENNEDY SPACE CENTER, FLA.--NASA's John F. Kennedy Space Center has awarded Fairchild Weston Systems, Inc. Data Systems Division, Sarasota, Fla., a $4,317,000 contract for the launch equipment integration system (LEIS) to be used at Vandenberg Air Force Base, Calif.

The contract calls for Fairchild Weston to design, assemble, install and checkout the LEIS to be used in the launch control center.

The LEIS consists of a remote control 400-channel programmable signal conditioning and pulse-code modulation data acquisition system. This system will provide real time data to test controllers in the firing room. The information received will indicate the amount of acoustical and environmental stress occurring to the Space Shuttle, flight hardware and pad structures in relation to current operations at the launch pad.

The LEIS will also provide support during Space Shuttle quick-response testing, solid rocket booster stacking operations, and other launch related activities.

The firm fixed price contract was awarded March 12, 1984 and calls for all work to be completed by May 1985. The equipment will be built in Sarasota, and delivered and tested by Fairchild Weston at Vandenberg A.F.B.

Vandenberg A.F.B. will be the Space Shuttle's prime launch and landing site for all polar-orbit missions. The first California Space Shuttle launch is now set for the fall of 1985.

Kennedy Space Center is the prime launch and landing site for NASA's Space Shuttle, scheduled for its twelfth launch no earlier than June 19, 1984.

# # # # #

April 23, 1984
KENNEDY SPACE CENTER TO HOST BUSINESS PROCUREMENT SEMINAR

Coinciding with the President's proclamation of Small Business Week from May 6-12, the Kennedy Space Center is sponsoring a business seminar and exhibition on May 11, 1984.

Open to representatives from both large and small businesses, the seminar will provide information on all procurements expected to be contracted at KSC in the next nine to 12 months. The briefing will also outline the correct procedures for applying and qualifying for these procurements.

Representatives from NASA, Lockheed Space Operations, Boeing Services International, E.G.& G., the Small Business Administration and the KSC Industry Assistance Office will be available for questions after the briefing. Representatives from 16 small companies doing business at KSC will also be present.

Expected to become an annual event, the seminar will begin at 9 a.m. in the Training Auditorium adjacent to the Operations and Checkout Building. The exhibition will be open from 1 to 3:30 p.m. in the Mission Briefing Room of the O&C Building.

For further information on either event and access badges contact the KSC Industry Assistance Office at 305/867-7353.

# # # # #

April 25, 1984
NOTE TO EDITORS/NEWS DIRECTORS

INTELSAT VA-A SPACECRAFT SHOWING SET FOR MAY 3

KENNEDY SPACE CENTER, Fla. - The first in a new series of communications satellites, which is also the first of six expendable vehicles spacecraft set for liftoff from the Cape Canaveral Air Force Station this year, will be available for viewing by the press on Thursday, May 3, at 11:00 a.m.

Intelsat VA-A, a higher-capacity satellite than its Intelsat V counterpart, is scheduled for launch from atop an Atlas/Centaur rocket no earlier than May 24. The satellite, built by Ford Aerospace and Communications Corp., features the addition of two steerable spot beam antennas which will be employed for domestic use. The spacecraft will have a capacity average of 15,000 two-way telephone circuits, compared to the Intelsat V's 12,000. Like the earlier versions, it will also have two television channels which will provide communications services between the Americas, Europe, the Middle East, and Africa.

News media will be escorted to view the Intelsat VA-A satellite. Project officials will be present to explain the uses of the satellite and to answer questions.

Press representatives who wish to cover the event should be at the Complex 39 Press Site (Dome) by no later than 10:30 a.m. for transportation to the Cape Canaveral Air Force Station.

News media representatives who do not have permanent press credentials should call the News Center at 305/867-2468, for badging arrangements.

# # #

April 30, 1984
ENGINEERS GIVE OLD ROCKET NEW KICKS

KENNEDY SPACE CENTER, Fla. — In the category of giving an old rocket new kicks, space engineers have developed an improved version of a rocket system which began its life as America's first ICBM. Since those days in the mid-50's, the Atlas rocket has also been the first stage for one of the nation's finest booster combinations for the peaceful exploration of space, the Atlas/Centaur.

Now, in a new stretched version, Atlas/Centaur — the most powerful unmanned vehicle currently launched by NASA — will be able to orbit a satellite weighing as much as 5,000 pounds into geosynchronous orbit. That is about 350 to 500 pounds more than is possible with the current Atlas/Centaur design.

While 500 pounds extra may not seem like much at first, the additional weight allowance permits satellite designers to include additional communication channels, extra maneuvering fuel, larger antennas or all three. What this means to the average citizen could be cheaper long distance telephone rates, more television programming, better banking services and other benefits all due to a more powerful, efficient and longer-lived communications satellite.

First launch of the improved booster is tentatively set for May 24 and will place an Intelsat V communications satellite into geosynchronous transfer orbit. Three additional Intelsat and three FleetSatCom military communications spacecraft are set for launch on the longer Atlas/Centaurs over the next few years. Most are growth versions of existing spacecraft which will require, or benefit from, the new, stronger booster.

The Atlas/Centaur program is managed by NASA's Lewis Research Center in Cleveland, Ohio and launches are under the direction of Kennedy Space Center's Expendable Vehicles Directorate in Florida.

According to John Gibb, manager of the Lewis Center's Atlas/Centaur program, the booster has a 96% launch success rate. "With Atlas/Centaur we have launched commercial satellites which have greatly improved communications throughout the world, application satellites to perform meteorological and scientific experiments, and astronomical satellites to observe and study celestial objects. In addition, the U.S. planetary exploration program has rested on the shoulders of Atlas/Centaur and its sister launch vehicle, the Titan/Centaur."
James Womack, Centaur Operations Division chief at KSC, said that the improvement modifications to the veteran booster were suggested by the vehicle manufacturer, General Dynamics/Convair, as a way to serve customers with heavier payloads. In addition, the improved performance allows flight planners to use a more southerly launch trajectory which passes over ground tracking stations instead of requiring expensive tracking aircraft.

Womack describes the changes to the Atlas stage of Atlas/Centaur as being similar to the "stretching" of commercial airliners. Making the body of the Atlas longer allows it to carry more propellants. A total of about 81 inches of extra tank space has been added to the stage's 70 feet, about 51 inches to the liquid oxygen (LOX) tank and the remainder to the refined kerosene fuel (RP-I) tank. Incidental modifications include lengthening fuel lines, control wiring and other structures, and beefup of weight-carrying bulkheads.

The modification of the Atlas is made easier by virtue of the fact that the rocket's tanks are constructed entirely of stainless steel sheets about the thickness of a U.S. dime. There are no internal braces, struts or beams. The rigidity of the structure depends upon internal pressure, much like a tire. By simply welding in additional rings of steel, the tanks can be lengthened.

The simple change allows the rocket to carry an additional 22,700 pounds of LOX, and nearly 10,000 pounds more RP-I. The added propellants allow the Atlas stage to fire about 18 seconds longer than the previous four minutes and 14 seconds average burn time. But changes to the Atlas stage do not account for the total improvement in capacity.

Perched atop the Atlas stage is the high-energy Centaur stage which burns liquid oxygen and liquid hydrogen, the most powerful propellant combination currently available. This makes Centaur the most powerful stage for its size of any yet built.

According to Steve Francois, NASA's Centaur Propulsion and Mechanical Branch Chief, the Centaur system has also been improved over time. Earlier modifications include silver plating the interior of the rocket nozzles to increase thrust. Now engineers are also changing from a pump-fed to a pressure-fed propellant system, changing from a hydrogen peroxide to a hydrazine attitude control rocket system.

Previous models of the Centaur relied upon dual boost pumps to force propellants from their tanks to the stage's twin rocket engines. But there was the danger that the super-cold liquids might cause the boost pumps to freeze up. If this were to happen the stage could not be ignited. Changing to a pressure-fed system eliminates that shortcoming, and also eliminates the weight of the pumps and their controls.

Changing to an attitude control system which uses hydrazine for the 14 tiny control and steering rockets allows a slightly more efficient system, and uses less propellant, by weight, than the existing hydrogen peroxide monopropellant. Centaur was the only known rocket to employ hydrogen peroxide in its attitude control system until the change.

Already proven, the "silver-throated Centaur" engines have the throat portion of the rocket nozzles further restricted by the application of a layer of silver. Silver is used because of its tremendous heat conduction ability, allowing the nozzle to stay cool. Finetuning the engines and improving the throat contour increases the thrust efficiency of the engines from the original 15,000 pounds to approximately 16,500 pounds in space.
Womack said that some ground facilities also require modification. The Atlas transport trailer, launch pad umbilical connections and work stands all needed work in order to accommodate the new Atlas/Centaur.

May 2, 1984

#   #   #
KSC EVALUATING COMPUTER "INTERPRETER" FOR SPACE STATION USE

KENNEDY SPACE CENTER, Fla. -- The crew aboard NASA's Space Station will rely heavily on computers and automated systems to perform a vast assortment of routine chores, and it will be essential that man and machine understand each other.

A team of computer language specialists at KSC are spearheading the preliminary development and evaluation of an advanced "interpreter" between complex machine operating systems and their human users.

The KSC effort, explains project manager Jan Heuser, will be to develop requirements, specifications, and a "demonstratable prototype" of the new user interface language.

The goal of the project, she adds, is to make it possible for space station crew members and various users to "speak" to the station's systems in simple English, instead of in complicated machine code.

"We don't want the station crew to have to sit there and figure out the intricacies of the computer. They have enough to do," says Audrey Dorofee, who is working on the project.

So, when station crew members want to open a hatch, they simply type on a keyboard, or perhaps just speak the words "open hatch" and several layers of computer software translate those English words into the machine code that automatically carries out the instruction.

This "command interpreter" will serve as a buffer between the user and the operating system. It will be designed to translate real-time commands, or stored strings of commands (procedures), into other computer languages which in turn translate the instructions into machine code.

- more -

May 7, 1984
It's sort of like an English-speaking person asking a French-speaking person (who understands English) to ask a Japanese person (who understands French but not English) to go do something.

KSC's involvement in the project is rooted in its development of the CJAL (Ground Operations Aerospace Language) language developed for the Shuttle's automated Launch Processing System.

GOAL gave the engineers manning firing room consoles the capability to issue procedural instructions to the computer. There are many similarities between requirements for the Space Station and the LPS.

With GOAL as a basis, KSC specialists will work to define and demonstrate a single new user interface language that will be designed for ground operations as well as aboard the station in orbit.

Scientists might also be able to use the language to write procedures that will activate, checkout, and control their experiments after they have been carried up to the station.

Such commonality, if it can be achieved, would result in cost savings and added flexibility.

The KSC assignment to evaluate the potential of this advanced computer software tool reflects a NASA-wide effort to develop and bring to maturity new and improved technology for use on the Space Station in the early 1990s.

# # #

M. Konjevich
SI
SI-SRV-1
KENNEDY SPACE CENTER TOURIST TOTALS ARE UP FOR APRIL

KENNEDY SPACE CENTER, Fla. - A total of 149,610 visitors took guided bus tours of the nation's Spaceport in April, an increase of 15.9 percent compared to the 129,034 taking the tours in April, 1983.

Figures for the first four months of 1984 show that over 600,000 people have visited the center this year, with over half a million of them taking the nominally-priced, two-hour tours of the state's fourth most heavily-attended tourist destination.

Arnold Richman, Chief of the Visitors Services Branch, said: "Although the attendance at the Space Center started out on a downward movement during the early part of the year, we expect attendance to increase, exceeding last year's total attendance. We are looking forward to the completion of the $8.5 million expansion of the Visitors Center program, highlighted by the IMAX film, 'Hail Columbia', to open in mid-June."

The expansion effort, totally funded by TWA Services Inc., NASA tour concessionaire, has already led to the expansion of food and souvenir services and a new complex with two huge theaters will open in June. The back-to-back theaters include a 440-seat unit with a six-story-tall screen in which the large camera format "Hail Columbia" film will be shown beginning next month.

The other half of the theater unit will house a 500-seat special events theater in which space-related productions will be presented.

The development program has also led to the expansion and modernization of exhibits and other attractions in the Hall of History and main exhibit hall.

More than 1.5 million visitors took the bus tours in 1983 with total visitation estimated at approximately 2 million.

# # #

May 11, 1984
**NOTICE TO NEWS MEDIA**

**T-30 41-D BACKGROUND BRIEFINGS AND CREW CONFERENCE**

**May 21, 1984 EDT**

1:30 p.m.  
Flight Director Briefing  
Lawrence S. Bourgeois  
41-D Lead Flight Director, JSC

2:00 p.m.  
SYNCOM IV-1 Briefing  
Ken Renshaw, Program Manager  
LEASAT Program

2:45 p.m.  
OAST-1 Briefing  
Robert McAnally  
OAST-1 Mission Manager, MSFC

3:30 p.m.  
LFC Briefing  
Bernard H. Mollberg  
Large Format Camera Project Manager, JSC

4:15 p.m.  
CFES Briefing  
James Rose  
Director, Electrophoresis Operations in Space, McDonnell Douglas Corp.

**May 22, 1984 EDT**

10:00 a.m.  
Crew Conference
NOTICE TO EDITORS/NEWS DIRECTORS:

NEWS CONFERENCE ON SOLAR MAXIMUM REPAIR SCHEDULED FOR MAY 24

KENNEDY SPACE CENTER, Fla. - A news conference on the repair of the Solar Maximum Mission satellite which was successfully carried out during the Space Shuttle 41-C mission in April will be held at the Goddard Space Flight Center, Greenbelt, Md., on Thursday, May 24, beginning at 10 a.m. EDT.

The conference will be carried at the Kennedy Space Center's Press Site Auditorium via one-way video with two-way audio providing a question and answer capability.

News media representatives with permanent credentials may drive directly to the Complex 39 Press Site. Those without should contact the news center at Area Code 305/867-2468 to make arrangements for access.

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

# # # # #

May 18, 1984
BUSINESSLAND CORPORATION IS AWARDED WORKSTATION CONTACT AT KSC

KENNEDY SPACE CENTER, Fla. - NASA's John F. Kennedy Space Center has awarded a contract for $147,786.65 to Businessland Corporation, Merritt Island, Florida.

The purpose of the contract is to acquire engineering workstations that have greater capability than the previous terminal devices used in support of the computer main frame. The workstations will shift engineering work load from the main center computer to desk top devices.

The workstations - or small computers - will also serve as a gateway to many main frame computers used by engineering and management personnel to expand their capabilities for daily data operations. These stations will allow local transmitting of text and data, which can either be processed locally or transmitted to a main frame computer, therefore reducing the work load on engineering management and staff.

Kennedy Space Center is the primary launch and landing site for the Space Shuttle, scheduled for launch on its twelfth flight no earlier than June 19, 1984. Shuttle launches at Vandenberg AFB, Calif., are scheduled to begin during late 1985.

# # #

May 24, 1984
NOTICE TO EDITORS/NEWS DIRECTORS

DISCOVERY FLIGHT READINESS FIRING SCHEDULED FOR FRIDAY, JUNE 1

KENNEDY SPACE CENTER, Fla. - The flight readiness firing of the Space Shuttle Orbiter Discovery's three main engines for 20 seconds is scheduled for no earlier than Friday, June 1, at 11 a.m. EDT.

The Discovery is the third of four Space Shuttle orbiters designed for flight in space and is to make its debut during the 41-D mission tentatively scheduled for liftoff in late June. A firm launch date will not be announced until after the flight readiness firing.

On Friday, the News Center will be open for telephone status reports only beginning at 5 a.m. but will not be open for direct media access until 8 a.m. Media representatives with permanent credentials may drive directly to the Complex 39 Press Site at the latter time.

Those without permanent credentials will be badged at the Gate 2 Pass and Identification Building on Florida Route 3 at the southern entrance to the center between 8 and 10 a.m.

Press personnel who plan on covering the engine firing from the camera site to the south of Pad A should plan on arriving at the Press Site no later than 9:15 a.m. so they may board the bus leaving for that location.

Conferences

A news conference on details of the firing procedure and differences between Discovery and previously-flown orbiters will be held in the Press Site Auditorium on Thursday, May 31, at 11 a.m.

On Friday, June 1, a news conference on the preliminary data available from the firing will be held in the Press Site Auditorium approximately one hour after the operation has been concluded.

# # # #

May 29, 1984
B.F. GOODRICH AIRCRAFT SERVICE CENTER AWARDED CONTRACT

KENNEDY SPACE CENTER, Fla. - NASA's John F. Kennedy Space Center has awarded the B.F. Goodrich Aircraft Service Center, Greensburg, Ohio, a contract for a new set of de-icer boots for the NASA-4 aircraft.

The fixed-price contract, valued at $25,124, was awarded May 17 and is targeted for completion by the end of June.

B.F. Goodrich will furnish all necessary tools, equipment, labor and materials to remove old de-icer boots and install a new set (total of 13) on the Grumman-built Gulfstream turbo-prop aircraft. Replacing de-icer boots is part of regular maintenance for the 19-year-old aircraft.

De-icer boots are designed to break ice formations on the leading edges of the aircraft's wings and tail elements to prevent the loss of lift and control.

NASA-4 is primarily a KSC support aircraft used for transporting executive and administrative personnel to contractor locations or to agency centers. NASA-4 also provides support to the White House, Congress, and to other NASA centers.

The Kennedy Space Center is NASA's prime launch and landing site for the Space Shuttle. The next flight, which will be the first flight for the newest Space Shuttle Orbiter Discovery, is targeted for lift-off on June 19. This mission will be the twelfth for the Space Transportation System. STS-1, the first Space Shuttle mission, was launched on April 12, 1981.

# # #

May 30, 1984
KSC COQUINA PIT (CRYSTAL LAKE) SLATED OFF-LIMITS TO PUBLIC

KENNEDY SPACE CENTER, Fla. - The Merritt Island National Wildlife Refuge and NASA security are planning to reduce public use of the Coquina Pit (known to the public as 'Crystal Lake') located about one mile north of Wilson's Corners -- the Kennedy Parkway (State Road 3) and State Road 402 intersection.

Signs will be posted and the road leading to the area will be blocked during off-duty hours between 4:30 p.m. - 8 a.m. The area will be patrolled during duty hours between 8 a.m. - 4:30 p.m., and violators will be subject to prosecution said Steve Van Meter, NASA's physical security specialist. Officials are expecting enforcement of the barricade by mid-June.

"The major reason for reducing public activity at the Coquina Pit is that the public's safety is at risk during operational hours. There is a limited amount of space in the pits when the tractors and drag lines are being operated," said Dorn Whitmore, outdoor recreation planner of the Merritt Island National Wildlife Refuge.

In addition, Whitmore said the equipment has been vandalized as a result of the public having free access to the area.

Coquina is a soft white limestone, formed of broken shells and corals cemented together, and is used for roadbeds and for building.

June 1, 1984
NOTICE TO EDITORS/NEWS DIRECTORS:
INTELSAT V/F9 LAUNCH RESCHEDULED FOR JUNE 9

KENNEDY SPACE CENTER, Fla. - Launch of the ninth in a series of Intelsat V-type international communications satellites aboard Atlas Centaur-62 has been rescheduled for Saturday, June 9.

The launch window for that date extends from 7:03 to 8:49 p.m. EDT.

Launch of the two-ton satellite for the 108-member-nation International Telecommunications Satellite Organization had been scheduled for Thursday, June 7.

The mission is the first for the new stretched version of the Atlas Centaur with enhanced payload capacity. The Centaur upper stage attitude control system was loaded with hydrazine propellant on Saturday and the delay is due to a problem which made it difficult to determine whether the full flight load had been tanked aboard.

The system was purged and cleaned and the hydrazine was to be loaded aboard on Monday, June 4, in preparation for the June 9 launch.

A pre-launch news conference on the 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, June 8. News media representatives who plan to attend should be at the Complex 39 News Center no later than 10:30 a.m. EDT. Transportation to and from the conference will be provided.

On launch day, media representatives with permanent credentials may drive directly to Press Site 1 at Cape Canaveral Air Force Station beginning at 5:30 p.m. Those without permanent credentials will be badged at the Gate 1 Pass and Identification Building at the south gate to CCAFS beginning at 5:30 p.m. Those unable to attend the news conference or launch in person may monitor those activities by calling the KSC Operator at 867-7110 and asking to be connected with the V-2 Circuit.

June 4, 1984
APPLIED SAFETY, INC. IS AWARDED CONTRACT WITH NASA

KENNEDY SPACE CENTER, Fla.—NASA's John F. Kennedy Space Center has awarded a contract for $26,040 to Applied Safety, Inc., Altamonte Springs, Fl.

The contract is for the purchase of 124 life support units which could be used to provide breathing oxygen should emergencies develop in the Orbiter Processing Facility or the Vertical Processing Facility.

The units could be used to provide five minutes of breathing oxygen should there be an accidental release of toxic materials or should other conditions develop in which workers are faced with an oxygen deficiency. A unique advantage of the breathing unit is that the head mask - a large plastic bag with an elastic band - is suitable for use by workers who wear glasses, have hearing aids or wear beards. The 11.5-inch-long, 4.5-diameter bottles hold seven cubic feet of oxygen under a pressure of 2,216 pounds per square inch.

The contract calls for Applied Safety, Inc. to deliver the breathing apparatus 15 days after receipt of order. The award was made to a small business firm.

Kennedy Space Center is the prime launch and landing site for the Space Shuttle, scheduled for its twelfth flight no earlier than June 22, 1984. Shuttle launches at Vandenberg AFB are scheduled to begin during late 1985.

June 5, 1984
NOTICE TO EDITORS/NEWS DIRECTORS

TENTATIVE LAUNCH ACTIVITY FOR REMAINDER OF 1984 LISTED

KENNEDY SPACE CENTER, Fla. - This is a tentative and unofficial launch schedule for the remainder of 1984. Space Shuttle launches are from Complex 39-A at the Kennedy Space Center. Delta and Atlas Centaur launches are conducted from NASA facilities on Cape Canaveral Air Force Station.

This schedule should be used for preliminary planning purposes only and should not be relied upon for making firm commitments on press coverage or vacation plans without first contacting the Kennedy Space Center Public Information Office at Area Code 305/867-2468.

A new manifest reflecting Space Shuttle target schedules through the late 1980s is available upon request.

**1984 LAUNCH ACTIVITY FORECAST**

<table>
<thead>
<tr>
<th>DATE</th>
<th>MISSION</th>
<th>LAUNCH VEHICLE</th>
<th>LAUNCH/ LAND SITE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET June 9</td>
<td>Intelsat V</td>
<td>Atlas Centaur</td>
<td>ESMC</td>
<td>INTELSAT international communications; reimbursable</td>
</tr>
<tr>
<td>NET June 22</td>
<td>41-D (STS-14)</td>
<td>Space Shuttle</td>
<td>KSC</td>
<td>Payload: Syncom IV-1, CFES, Large Format Camera, OAST-1;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discovery</td>
<td>DFRF</td>
<td></td>
</tr>
<tr>
<td>Aug. 9</td>
<td>AMPTE</td>
<td>Delta</td>
<td>ESMC</td>
<td>Active Magnetospheric Particle Tracer Explorer; space physics - NASA cooperative with Germany</td>
</tr>
<tr>
<td>No date yet set</td>
<td>Galaxy-C</td>
<td>Delta</td>
<td>ESMC</td>
<td>Hughes commercial communications; reimbursable</td>
</tr>
</tbody>
</table>

- more -
<table>
<thead>
<tr>
<th>Date</th>
<th>Mission</th>
<th>Launch Site</th>
<th>Launch Site Code</th>
<th>Payload Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 29</td>
<td>41-F</td>
<td>Space Shuttle</td>
<td>KSC</td>
<td>Payload: Telstar 3-C, SBS-D, Syncom IV-2, SPARTAN-1. First Autoland demonstration.</td>
</tr>
<tr>
<td></td>
<td>(STS-16)</td>
<td>Discovery</td>
<td>DFRF</td>
<td></td>
</tr>
<tr>
<td>Late-Aug.</td>
<td>Intelsat V</td>
<td>Atlas Centaur</td>
<td>ESMC</td>
<td>INTELSAT international communications; reimbursable</td>
</tr>
<tr>
<td>Early Sept.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct. 1</td>
<td>41-G</td>
<td>Space Shuttle</td>
<td>KSC</td>
<td>Payload: Shuttle Radar Lab-1, Earth Radiation Budget Satellite</td>
</tr>
<tr>
<td></td>
<td>(STS-17)</td>
<td>Challenger</td>
<td>KSC</td>
<td></td>
</tr>
<tr>
<td>Sept. 27</td>
<td>NATO-IIID</td>
<td>Delta</td>
<td>ESMC</td>
<td>North Atlantic Treaty Organization communications; reimbursable</td>
</tr>
<tr>
<td>Nov. 2</td>
<td>51-A</td>
<td>Space Shuttle</td>
<td>KSC</td>
<td>Payload: MSL-1, Telesat-H, GAS Bridge</td>
</tr>
<tr>
<td></td>
<td>(STS-19)</td>
<td>Discovery</td>
<td>KSC</td>
<td></td>
</tr>
<tr>
<td>Mid-Nov.</td>
<td>Intelsat V</td>
<td>Atlas Centaur</td>
<td>ESMC</td>
<td>INTELSAT international communications; reimbursable</td>
</tr>
<tr>
<td>Early Dec.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec. 9</td>
<td>51-C</td>
<td>Space Shuttle</td>
<td>KSC</td>
<td>Payload: Dept. of Defense</td>
</tr>
<tr>
<td></td>
<td>(STS-20)</td>
<td>Challenger</td>
<td>KSC</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** NET means No Earlier Than

ESMC (Eastern Space & Missile Center) - Cape Canaveral launches
DFRF (Dryden Flight Research Facility) - California landings
KSC (Kennedy Space Center - Launch Complex 39)

---

June 6, 1984
NASA RELEASE

NASA ANNOUNCES CREW MEMBERS FOR FUTURE SPACE SHUTTLE FLIGHTS

The flight crew for Space Shuttle flight 51-H and mission specialist astronauts for mission 61-E were announced today by NASA. Veteran astronaut Vance D. Brand will command mission 51-H, scheduled for launch in November 1985, using the orbiter Atlantis. Brand was commander of STS-5, the first operational Shuttle flight in November 1982 and mission 41-B, the first use of the manned maneuvering Shuttle flight in February 1984.

Other members of the 51-H crew are Michael J. Smith, pilot; Robert C. Springer, Dr. Owen K. Garriott and European Space Agency astronaut, Dr. Claude Nicollier, mission specialists; and Dr. Michael L. Lampton and Dr. Byron K. Lichtenberg, payload specialists.

Payload on Flight 51-H will be Earth Observation Mission-1 (EOM-1), a reflight of nine Spacelab-1 experiments in the areas of space plasma physics, solar physics, atmospheric physics, astronomy and earth observations. A short Spacelab habitable module and a pallet of experiment hardware will occupy the cargo bay.

Launch of 61-E is set for March 1986, with a crew of six on the orbiter Columbia. Mission specialists for this mission include Dr. Robert A. R. Parker, David C. Leestma and Dr. Jeffrey A. Hoffman. The cargo will be Intelsat VI-1, a large communications satellite for Intelsat, the multinational communications satellite network, and Astro-1, an astronomy package designed to view Halley's Comet.

The 51-H commander, Brand, 53, a native of Longmont, Colo., came to NASA in 1968. His first space flight was as command module pilot on the July 1975 Apollo-Soyuz Test Project. Smith, 39, is a native of Beaufort, N. C. As a Navy pilot, he served on the aircraft carriers USS Kitty Hawk and USS Saratoga. He came to NASA in 1980 and this will be his first Shuttle mission.

The 51-H mission specialists include Springer, 42, who was born in St. Louis, Mo., and joined NASA in 1980 after serving as a pilot in the Marine Corps. Garriott, 53, is a veteran astronaut, having logged nearly 70 days in space, including the 59-day Skylab-3 mission in 1973 and the nine-day Spacelab-1 flight in 1983. Garriott has been with been with NASA since 1965. He was born in Enid, Okla.

- more -
Nicollier is a European astronaut flying as a mission specialist with European payloads. A native of Vevey, Switzerland, he is 39 years old. His experience prior to assignment for astronaut training was in astronomy. He is a pilot in the Swiss Air Force Reserve.

Lampton, 43, is a native of Williamsport, Pa. A physicist, he was a backup payload specialist for the Spacelab-1 mission. Lichtenberg, 36, is a biomedical engineer and pilot. A native of Stroudsburg, Pa., he was one of two payload specialists who flew on the Spacelab-1 mission.

Of the 61-E mission specialists, Parker also flew on Spacelab-1, serving as a mission specialist. A native of New York City, the 47-year-old astronomer/astronaut joined NASA in 1967. This will be his second space flight.

Leestma, 35, was born in Muskegon, Mich. A Navy pilot, he was selected as an astronaut candidate in 1980. He also is a crew member on Shuttle flight 41-G, scheduled to fly in October 1984. Hoffman, 39, is a Brooklyn, N. Y., native. A member of the 1978 class of astronauts, he is scheduled to fly a Shuttle mission in August. Hoffman's experience prior to coming to NASA was in high energy astrophysics.

June 7, 1984

#  #  #
NASA EXPANDS PRC SYSTEMS SERVICES CONTRACT

KENNEDY SPACE CENTER, Fla.- NASA's John F. Kennedy Space Center has expanded its existing contract with PRC Systems Services Co., Cocoa Beach, Florida, by $3,114,227.

Under the basic contract, PRC provides engineering support for the Directorate of Engineering Development for future Shuttle programs, Centaur programs, and multi-programs that include drafting and illustration, cost estimation and special studies associated with mission space developments.

The contract expansion will provide 56 additional man-years of services in support of the Department of Defense's operating requirements at Vandenberg Air Force Base in California, Kennedy Space Center, and the Cape Canaveral Air Force Station. The new award brings the aggregate value of the overall contract to $40,806,682.

The basic contract period extends from October 1, 1983 through September 30, 1984.

Kennedy Space Center is the prime launch and landing site for the Space Shuttle, scheduled for launch on its twelfth flight no earlier than June 25, 1984. Shuttle launches at Vandenberg AFB are scheduled to begin during late 1985.

#  #  #

June 12, 1984
KENNEDY SPACE CENTER, Fla. -- The Cape Canaveral National Seashore's Playalinda Beach, located on NASA property just north of Launch Complex 39, will be closed to the public starting Friday, June 22, at 8 p.m. for the 41-D launch.

Safety considerations require closing the beach during the Space Shuttle launch countdown, liftoff, and landing. The first flight of the orbiter Discovery is scheduled for launch no earlier than 8:43 a.m. Monday, June 25.

The beach will re-open approximately two hours after a successful liftoff.

Badged space center employees will be allowed to enter KSC via Gates 4TT (State Roads 402 and 406) and Gate 6TT, located on State Rd. 3 south of the Haulover Canal until 8:25 a.m. the day of the launch.

Anyone planning an excursion to Playalinda Beach around the time of a scheduled Shuttle launch or landing should check on whether the beach is open by calling the Canaveral National Seashore at 867-4675. Certain pre-launch operations, such as tank fueling tests, can also require that the beach be closed.

# # #

June 14, 1984
For Release:

Lisa Malone
(305) 867-2468

KSC Release No: 126-84

NOTICE TO EDITORS:

PASS AND ID GATE 2 TO OPEN JUNE 22 FOR 41-D BADGING

KENNEDY SPACE CENTER, Fla. -- The Pass and Identification Building at Gate 2 on State Road 3, Merritt Island, will be opened for Space Shuttle mission 41-D badging beginning at 8 a.m. on Friday, June 22, which is launch minus three days.

In the past, this badging station has been opened at launch minus five days for press accreditation purposes.

Beginning with the Space Shuttle 41-D mission and subsequent missions -- unless alternate plans are announced -- the Gate 2 Pass and Identification Building will be open for accreditation according to the following schedule:

<table>
<thead>
<tr>
<th>Launch Minus</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 days</td>
<td>8 a.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>2 days</td>
<td>8 a.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>1 day</td>
<td>8 a.m. - 8 p.m.</td>
</tr>
<tr>
<td>Day</td>
<td>3 a.m. - 1 hour before launch</td>
</tr>
</tbody>
</table>

News media representatives who have received accreditation letters may pick up their 41-D credentials between 8 a.m. and 4:30 p.m. on Friday and Saturday, June 22 and 23; between 8 a.m. and 8 p.m. on Sunday, June 24; or any time between 3 a.m. Monday, June 25, and one hour before the 41-D liftoff.

The 41-D Press Kit, a News Media Handbook, and other notices to the press will be available at the badging station.

The News Center will be staffed on a 24-hour basis beginning at 00:01 a.m. Saturday, June 23 -- three hours before the scheduled start of the 46-hour 41-D countdown. The News Center will then remain open around the clock through the end of the mission.

# # #

June 14, 1984
BOAT TRAFFIC NEAR KSC WILL BE RESTRICTED DURING 41-D LAUNCH

KENNEDY SPACE CENTER, Fla. — Safety considerations require that certain areas of the Atlantic Ocean and shallow lagoons near and on Kennedy Space Center be closed to boat traffic during the upcoming Space Shuttle launch.

Coast Guard vessels will be patrolling the secured areas. Boaters who have any questions about where they will be permitted to travel the morning of the launch may contact the Range Control Center on Channel 12 VHF-FM, or the U.S. Coast Guard Station at Port Canaveral on Channel 16 VHF-FM, for detailed information. Advisories will be broadcast. The restricted areas are as follows:

In the Atlantic, boat travel is restricted anywhere south of an imaginary line drawn eastward from Haulover Canal and extending three miles out to sea. No boat travel is permitted north of the Port Canaveral buoy lines. The boundary also extends three miles out. Boaters are advised that a launch danger zone rests within the same boundaries for a distance of 180 miles offshore.

In Mosquito Lagoon, no boat traffic is allowed in that portion of the lagoon to the south of Haulover Canal.

For portions of the Indian River north of Titusville, boat traffic is generally restricted to the areas near the channel or west of the channel. Coast Guard patrol boats will secure areas near the eastern shoreline.

For areas of the Indian River south of Titusville, boat travel will be restricted from entering Banana Creek or from encroaching on the eastern shoreline.

In the Banana River, boats will not be allowed north of marker 35 or east of the marked channel.

These restrictions on boat travel are presently in effect, and will be lifted four hours after the launch. The only exception is that the 3-mile offshore security zone in the Atlantic is enforced whenever a Shuttle vehicle is on the pad.

June 14, 1984
KSC RELEASE NO: 124-84

WATERWAY BRIDGE OPENINGS TO BE CONTROLLED ON 41-D LAUNCH DAY

KENNEDY SPACE CENTER, Fla.-- The opening and closing of bridges over waterways surrounding the Kennedy Space Center will be strictly controlled during the hours immediately before and after the launch of the Space Shuttle Discovery on its first mission.

The launch is now scheduled for 8:43 a.m. on Monday, June 25, but the restrictions will apply on subsequent launch dates should a delay be encountered.

The U.S. Coast Guard's Seventh District in Miami has given KSC authority to restrict the operation of the bridges from three hours before launch, if needed, until three hours after liftoff to facilitate the flow of vehicular traffic in and out of the space center.

Beginning at T-3 hours, bridges will be opened for five minutes every half-hour. They will remain closed from T-60 minutes until T plus 90 minutes. Beginning at T plus 90 minutes, they will be opened for five minutes every half hour until T plus three hours, at which time normal opening procedures will be resumed.

Bridges to be affected by these regulations include:
   * - The Canaveral Harbor/Barge Canal Bridges at State Road 3 on Merritt Island, and State Road 401 at Port Canaveral.
   * - The Intercoastal Waterway bridges over the Indian River at Addison Point (NASA Causeway).
   * - The Banana River Bridge between KSC and Cape Canaveral Air Force Station (NASA Causeway East).

The bridge over Haulover Canal, which links the Indian River with Mosquito Lagoon, will be oriented in an open position at approximately T-1 day to halt traffic, but will lowered to its normal position shortly after launch.

June 14, 1984
GENERAL AVIATION RESTRICTED FROM KSC AIRSPACE DURING LAUNCH

KENNEDY SPACE CENTER, Fla. -- During the launch of the Orbiter Discovery on the twelfth Space Shuttle flight, the skies in the vicinity of the space center will be reserved for official mission aircraft and will be off-limits to general aviation pilots.

The possibility of mid-air collisions and the other hazards associated with a Space Shuttle launch and landing dictate that surrounding airspace be cleared.

All restricted areas associated with the space center will be activated for the launch. The areas immediately surrounding the space center are expected to be extremely congested with both controlled and uncontrolled air traffic. The more prudent pilot may wish to remain grounded during the Shuttle launch rather than risk the chance of a collision or a violation of Federal Aviation regulations.

Violations may result in sanctions against pilots, including suspension or revocation of pilot privileges.

Pilots who find it absolutely necessary to be airborne on the morning of the launch are advised to stay well west of the Indian River and seek traffic advisories from the Patrick Approach Control (VHF 118.4), TICO (TIX) Airport Tower (VHF 118.9), or Melbourne FSS on discrete frequencies VHF 122.6 or 123.6.

# # #

June 14, 1984
NOTE TO EDITORS/NEWS DIRECTORS

SBS 4 SPACECRAFT SHOWING SET FOR JULY 9

KENNEDY SPACE CENTER, Fla.--SBS 4, the fourth in a series of telecommunications satellites for Satellite Business Systems (SBS), will be available for viewing by the press on Monday, July 9 at 1 p.m. SBS representatives will be on hand to discuss the function of the spacecraft and answer questions about it.

SBS 4 will be deployed from the cargo bay of the orbiter Discovery on the 41-F mission currently scheduled for launch in late August. The spacecraft utilizes a solid propellant Payload Assist Module to boost it to geosynchronous orbit. Two other communications spacecraft, TELSTAR 3-C and LEASAT-2, will share the cargo bay with SBS 4 on that mission.

The SBS network of spacecraft and ground systems serve corporate customers of SBS, a company jointly owned by subsidiaries of IBM, Comsat General Corporation, and Aetna Life and Casualty. Built by Hughes Aircraft, SBS satellites have 10 channels with a capacity for 1,250 two-way telephone conversations per channel, 10 simultaneous color television transmissions, or a combination of the two. The data rate is 480 megabits per second. The satellite’s signal beam covers the continental United States, with higher gains focused on the densely populated eastern and western portions of the country.

Press representatives who wish to view the spacecraft should be at the Complex 39 press site no later than 12:30 p.m. Transportation to Hangar AM where the spacecraft is being processed will be provided. News media representatives who do not have a permanent press badge should call the News Center at Area Code 305/867-2468 to make arrangements for picking up credentials.

June 18, 1984

#  #  #  

June 18, 1984

#  #  #
NOTE TO EDITORS/NEWS DIRECTORS

SPACELAB 2 VIEWING SET FOR JULY 19

KENNEDY SPACE CENTER, Fla.—SPACELAB 2, the first pallets-only mission of the versatile orbiting laboratory, will be available for viewing by the press on Thursday, July 19 at 11 a.m.

Spacelab 2 Mission Manager Roy Lester and Mission Scientist Dr. Gene Urban, both from the Marshall Space Flight Center, as well as mission specialists and payload specialists representing the Spacelab 2 flight crew, will be on hand to discuss the purpose of the Spacelab 2 mission and answer questions about it.

Spacelab 2 scientists and astronauts are at KSC the week of July 16-20 participating in the Mission Sequence Test which simulates portions of the actual week-long mission.

Members of the experiment investigation teams will be available during the week for interviews concerning their particular experiments. Media who would like to set up an interview with any of these investigators should call this office and make the necessary arrangements.

The configuration of Spacelab 2 includes three pallets, which hold experiments requiring direct space exposure, an "igloo" which will contain Spacelab subsystems, and a special support fixture for a large cosmic ray experiment. Thirteen experiments have been selected to participate in the Spacelab 2 mission, including experiments in the fields of solar physics, plasma physics, infrared astronomy, high energy physics, atmospheric physics, life sciences and technology. Spacelab 2 is currently scheduled to be launched from KSC in April 1985.

Press representatives who wish to attend the briefing should be at the Complex 39 press site no later than 10:30 a.m. Thursday. Transportation to the Operations and Checkout Building where the Spacelab was assembled and is being checked out for flight, will be provided. News media representatives who do not have a permanent press badge should call the News Center at Area Code 305/867-2468 to make arrangements for picking up credentials.

July 12, 1984
FIRST HUMAN FOOTPRINTS LEFT ON LUNAR SURFACE 15 YEARS AGO

"The material and scientific legacy of Apollo 11 and of the entire Apollo program has included much of the technological base upon which the Space Shuttle, Space Station and future programs are founded. But its real value was to instill in us as a nation the confidence that we can succeed in virtually every scientific venture that we - as a free and united people - might attempt."

NASA Administrator James M. Beggs

The first assault on the moon to be launched from Florida took place in the mid 1860s -- and it existed only in the fertile imagination of French science-fiction writer Jules Verne. More than a century would pass before technology and determination could transform fiction to reality and place the space-booted footprints of two members of the Apollo 11 crew on the moon's stark Sea of Tranquility. But time passes quickly and that historic mission is now 15 years in the past.

Like Verne's flight of fancy, the Apollo 11 journey also began in Florida, but more than 125 miles to the east of the novelist's imaginary launch site near Tampa.
The launch date was July 16, 1969, and liftoff was scheduled for 9:32 a.m. EDT. It was a hot summer morning with clear blue skies flecked with only a few fleecy clouds. An estimated one million people gathered on the beaches, causeways and roadsides near the Kennedy Space Center. And a world-wide TV audience appraised at another half-billion would view the launch and other aspects of the mission on television screens.

Press interest was intense. Nearly 3,500 news men and women from 56 countries were accredited to cover the flight.

Strapped supine in their couches in the conical command module atop the 36-story-tall Saturn V/Apollo venting wispy, white streams of intensely cold liquid oxygen and liquid hydrogen gases from propellant tanks, were the three crew members: Neil Armstrong, 38, a civilian test pilot, the commander; Edwin A. Aldrin, 39, an Air Force colonel, lunar module pilot, and Michael Collins, 38, an Air Force lieutenant colonel, command module pilot. All had flown in space before during Project Gemini.

Countdown functions were controlled and monitored by 450 NASA and industry personnel in the Launch Control Center's Firing Room. An additional 100 launch team members monitored spacecraft functions in the Operations and Checkout Building.

Project Apollo was a national effort - a test of the nation's determination and technical prowess. At its peak, more than 400,000 people were involved in Apollo, working in NASA centers, assembly plants, colleges and universities from the
Atlantic to the Pacific - from the Gulf of Mexico to the Canadian border.

And now Apollo faced its ultimate test by fire!

Five of the powerful, three-stage Saturn Vs which would hurl them across the quarter-million-mile void had been launched before. They had performed magnificently.

The spacecraft which would carry them to the previously untouchable moon and return them to earth had been tested in earth and lunar orbit. And during the Apollo 10 mission two months earlier, the spider-like lunar module had carried astronauts Tom Stafford and Gene Cernan to within 10 miles of the lunar surface.

The stage for the landing was set. The countdown which had begun July 10 had proceeded flawlessly and the clock inexorably swept away the final hours, minutes and seconds before liftoff from Complex 39's Pad A - - and the beginning of humanity's most ambitious journey.

Waiting expectantly for the flash of flame and ponderous liftoff which would signal the beginning of the Apollo 11 flight were the controllers at Mission Control in Houston who would guide the mission once it cleared the tower, the members of the vast, world-wide communications team which would be in contact with the spacecraft except during their periodic eclipses when they passed behind the moon, and the large recovery team which would pluck them from the Pacific Ocean at mission's end.

- more -
At T-5 minutes, the launch tower swing arm providing access to Apollo 11 was swung back to the liftoff position. "Cleared for launch" crackled across the command circuits one minute later.

The countdown went on automatic sequence at T-3 minutes, 20 seconds, and computers took over control of the launch, performing final checks and command functions with lightning-like speed.

At T-8.9 seconds, the first of the five 1.5-million-pound thrust engines on the 33-foot-diameter booster stage roared to life. A torrent of fire and smoke erupted from the north end of the pad's flame trench as the remaining four followed at millisecond intervals.

At T-2 seconds, all five engines were up and running at full thrust. Electronic brains ordered the holddown arms to free the towering, six-million-pound vehicle for flight as the count reached zero for an on-time 9:32 a.m. liftoff.

Apollo 11 rose slowly, majestically, cleared the tower and gradually gained momentum, its upward movement accompanied by emotional cheers from the crowds and the shock wave produced by the brute force of 180 million horsepower.

Separation of the booster at an altitude of 42 miles and a downrange distance of 57 miles was clearly visible and the second and third stages burned successively to place Apollo 11, with the third stage still attached, in a 115-mile-high parking orbit.

- more -
All flight systems checked out and the Saturn's third stage was reignited for the six-minute burn which would hurl Apollo past the earth's gravity and toward the moon.

The translunar injection burn completed, the Apollo 11 crew in Columbia performed an intricate vehicular ballet as they headed for the moon with a velocity in excess of 24,000 miles per hour. The command/service module was separated from the conical spacecraft adapter at the top of the third stage, flipped around 180 degrees to face it, and then moved in gingerly to dock the apex of the parent spacecraft with the top of the lunar module Eagle.

Docking accomplished, springs inside the adapter ejected the spacecraft away from the third stage. An evasive maneuver moved the docked spacecraft away from the third stage/adapter as the three-day cruise from the earth to the moon continued.

The path of the moon in its orbit around the earth and that of Apollo 11 soaring outward from the parent planet intersected on July 19 and the spacecraft went into orbit around the moon at 1:28 p.m. EDT on that day. As the spacecraft moved around the moon on its second orbit, observers back on earth were treated to live color telecasts of the lunar surface.

At 8:50 a.m. on July 20, Armstrong and Aldrin entered the lunar module for a final checkout of all systems. At 1:47 p.m., Eagle was separated from Columbia and Apollo 11 was on its way to
its place in the history books. "Eagle has wings," was Armstrong's laconic comment as the two spacecraft separated. Keeping lonely vigil aboard Columbia in a 69-mile-high lunar orbit as Eagle descended toward the moon was Command Module Pilot Mike Collins.

Eagle began its descent 300 miles from the Sea of Tranquility, flying almost horizontally, engine bell forward, so the reverse thrust of its throttleable engine would kill off forward velocity. As forward momentum dropped, Eagle was gradually tilted cabin upwards to begin the final vertical descent.

At an altitude of about 2,000 feet and a mile from the landing site, Armstrong and Aldrin were able to view the lunar surface in detail. The landing area for which they were headed was cluttered with many large rocks.

Spotting an open area between the clusters of boulders, they began the final descent with Armstrong flying Eagle and Aldrin reading off altitude and velocity measurements. It was 4:17 p.m. EDT on June 20, 1969, when tense listeners back on earth heard Armstrong's calm voice announce: "Houston, Tranquility Base here. The Eagle has landed."

The landing was a success but it also had elements of suspense. The overflight past the boulder-strewn craters to the level landing site had consumed an additional 40 seconds of burn time of precious fuel and Eagle was operating on its - more -
reserve supply. Eagle was within less than 30 seconds of being forced to abort to rendezvous with the orbiting Columbia using the lunar module's ascent stage when the successful landing was achieved.

Left onboard the descent stage at engine stop was about 400 pounds of propellant - about two percent of the total supply.

It was 10:39 p.m. that evening when Armstrong opened and squeezed through the hatch to begin his historic descent to the surface down the nine-step ladder. Aldrin photographed the descent from inside the Eagle's cabin and it was viewed on earth through a television camera mounted on the outside of the lunar module.

It was 10:56 p.m. when Armstrong's left foot touched the ground and he uttered: "That's one small step for a man, one giant leap for mankind." Aldrin joined Armstrong on the moon's surface 19 minutes later to help carry out an ambitious schedule.

Aldrin and Armstrong drove a staff with 3-by-5-foot American flag into the lunar soil and received a message of congratulations from President Nixon. They set up a solar wind composition experiment, seismometers to measure moonquakes and meteorite impacts, and a laser-reflecting mirror array (to measure moon-earth distances) on the moon's surface.

They took core samples of lunar materials and collected more than 53 pounds of dirt and rock samples before climbing back into the Eagle. Aldrin re-boarded Eagle at 12:54 a.m. July 21 after...
1 hour, 43 minutes on the moon's surface. Armstrong followed him back in at 1:09 a.m. His lunar surface time totaled 2 hours, 13 minutes.

The Eagle's ascent module engine was ignited 12 hours later for the climb back into lunar orbit where they would rejoin Collins cruising around the moon in Columbia. Eagle's total lunar surface staytime was 21 hours, 36 minutes.

The Eagle was jettisoned into lunar orbit and Columbia's service module's main engine was ignited for the journey back to earth at 12:55 a.m. EDT on July 22.

The Apollo 11 mission ended successfully with the splashdown of the command module Columbia in the mid-Pacific at 12:15 p.m. EDT on July 24. The spacecraft was recovered by the aircraft carrier Hornet.

Five more lunar landings would be accomplished before Project Apollo ended in December, 1972. Manned exploration of the solar system - only a dream for Verne - had begun.

# # # # #

July 12, 1984

Note to Editors: Photographs - both 8 x 10 inch black and white and 4x5 inch color transparencies - are available to illustrate this Apollo 11 story upon request. Please call Dick Young at Area Code 305/867-2468.

# # # # #
KENNEDY SPACE CENTER, Fla. -- Fifteen years ago this month, astronauts Neil Armstrong, commander, and Edwin Aldrin, pilot, left footprints on the surface of the moon after a successful liftoff of the Apollo 11 spacecraft from KSC on July 16, 1969. Michael Collins, command module pilot, kept lonely vigil from lunar orbit in Columbia.

In recognition of this historical event, a ceremony will be held at 10 a.m. on Monday, July 16, at the Spaceport U.S.A. Visitors Center on the NASA Parkway (or Columbia Boulevard).

The schedule of events is as follows:

The program will be opened by Bob Murkshe, chairman of the Apollo 11 Commemorative Association.

Brief remarks will then be made by Dick Smith, KSC center director, and U.S. Congressman Bill Nelson.

Harry Chambers, vice president and general manager of Trans World Services, Inc. will extend a welcome to the visitors and offer free cake and soft drinks to those attending the ceremony.

Press representatives are invited to attend the ceremony. As the Visitors Center is outside the security area, no special badges or other clearances are required.

#  #  #

July 12, 1984
TRIGGERED LIGHTNING PROJECT BRIEFING SET FOR JULY 20

KENNEDY SPACE CENTER, Fla. -- A briefing on a joint Air Force and NASA lightning research project that will be conducted using special techniques to "trigger" lightning strikes will be held at the KSC Press Site Auditorium at 9 a.m. Friday, July 20.

NASA, Air Force, Federal Aviation Administration, and French project participants will discuss the research program, which began at KSC this week, and its potential benefits.

Following the briefing will be a tour of the triggered lightning launch site, located about one mile northeast of the Vehicle Assembly Building.

Press representatives who wish to attend the briefing and site tour should be at the KSC Complex 39 Press Site no later than 8:45 a.m. Friday. Transportation to the launch site will be provided. News media representatives who do not have a permanent press badge should call the News Center at 867-2468 to make arrangements for picking up credentials.

# # #

July 18, 1984
KENNEDY SPACE CENTER, Fla. -- A joint Air Force and NASA research effort to study the effects of lightning strikes on flying craft is being conducted at KSC using French-developed techniques to "trigger" lightning events.

Small rockets launched at just the right time beneath a properly charged cloud will trail a thin wire that acts as a lightning trigger.

Just before the French engineers launch one of the rockets, project coordinators hope to position a twin-engine research plane where it will be struck by the triggered cloud-to-ground lightning stroke, permitting both airborne and ground measurements of the lightning characteristics.

If the efforts are successful, data gathered during the month-long project will help researchers better understand how lightning affects aircraft safety, particularly aircraft built with composite materials and electronic flight control systems.

Knowledge gained from the research will be directly applicable to winged spacecraft like the Space Shuttle, which has electronic flight control systems, and to the design of lightning protection systems for KSC facilities.

KSC's Technology Projects Office, the focal point for meteorological research activities at KSC, is funding the center's participation with the Air Force's Wright Aeronautical Laboratories.

French investigators, who conducted triggered-lightning experiments at Valkaria Airport in South Brevard County last year, were brought into the project under contract with KSC to conduct the rocket launches that will produce triggered lightning.
In addition, investigators from the U.S. Naval Research Lab, the University of Florida, the University of Arizona, and the State University of New York at Albany are also taking part in the lightning research program.

KSC Project Manager Bill Jafferis said the triggered-lightning research will continue through mid-August and is expected to resume next summer.

"In our first phase, we'll be concentrating on gathering measurements important to the study of aircraft safety," said Jafferis. The research, he pointed out, will be equally valuable in assessing how lightning might affect the returning Space Shuttle.

Later, he said, triggered-lightning may be used to verify by actual measurements the design of protective, wire-cage structures that could shield operational areas at KSC such as fuel farms, permitting normal work to continue despite the presence of lightning.

The rocket launches that will initiate triggered lightning will take place from a field located a little more than a mile northeast of the Vehicle Assembly Building. Twelve tubes mounted to a telephone pole hold the three-foot-tall solid propellant rockets.

In a instrument trailer located just 150 feet away, the French researchers monitor electric field measurements to determine when gathering storm clouds are ripe for a trigger attempt. Meanwhile, controllers are instructing the plane crew on when to fly over the site.

The launch is initiated when a button is pushed in the trailer, and the small rocket bursts from its launch tube trailing a thin wire up to an altitude of about 2300 feet. The aircraft will fly over at about 5,000 feet, and there is no danger of the rocket hitting the aircraft.

If the careful orchestration works, a lightning stroke will descend from the clouds, striking the plane and passing through it as it is attracted to the wire. Once lightning strikes the wire, the wire is vaporized and the stroke continues on down the electrical pathway to the ground.

While research planes have measured strikes by intercloud lightning in previous programs, Jafferis said the measurement of cloud-to-ground lightning strikes on an aircraft will be a unique aspect of this project.

- more -
Special instruments and cameras in the launch site trailer, and at a second site occupied by the Naval Lab and university researchers, will record the event in detail.

Ground measurements will later be compared to data acquired by instruments aboard the specially-instrumented twin engine Convair C-580 provided by the Federal Aviation Administration.

"Analysis says the strength of the lightning current should be less in the air than it is at the ground," said Jafferis. "We should be able to verify this by measurements."

With the new, lightweight composite materials being incorporated into aircraft design, and the increasing dependence of flying craft on electronic systems, vulnerability to lightning effects is an important design consideration, Jafferis said.

"We are going to try to duplicate as nearly as possible the lightning environment," he explained. "We may eventually be able to build a simulator that will test various designs."

The KSC-hosted lightning project will complement other research programs being conducted by other NASA centers, the Air Force, and other organizations.

# # #
NASA ANNOUNCES UPDATED FLIGHT CREW ASSIGNMENTS

The National Aeronautics and Space Administration today announced the assignment of the commander and mission specialist for a future Space Shuttle flight and the rescheduling of some other crews for upcoming missions.

Veteran astronaut Henry W. Hartsfield, commander of the next Space Shuttle flight 41-D, has been named to command flight 61-A, the dedicated German Spacelab mission planned for launch Oct. 14, 1985. James F. Buchli has been assigned as a mission specialist for that flight.

Previously named for that flight were pilot Steven R. Nagel, mission specialists Guion S. Bluford, Jr., and Bonnie J. Dunbar, and payload specialists Reinhard Furrer (German), Ernst Messerschmid (German) and Wubbo Ockels (Dutch).

The flight crew for mission 41-F, commanded by Karol J. Bobko, has been reassigned to mission 51-E, scheduled for launch Feb. 12, 1985. The crew's original flight was deleted and some of its cargo placed on flight 41-D after the launch abort of that flight in late June.

The attached list is based on a plan to reschedule crews for the earliest possible date on flights for which the training is similar to their original mission.

August 3, 1984
**FLIGHT 41-D**

Projected date: No earlier than Aug. 24, 1984  
Orbiter: Discovery  
Payload: OAST-1, SBS-D, Telstar-3C, Syncom IV-2  
Flight crew:  
  Henry W. Hartsfield, CDR  
  Michael L. Coats, PLT  
  Richard A. Mullane, MS  
  Steven A. Hawley, MS  
  Judith A. Resnik, MS  
  Charles D. Walker, PS (McDonnell Douglas)

**FLIGHT 41-G**

Projected date: Oct. 1, 1984  
Orbiter: Challenger  
Payload: OSTA-3, ERBS, LFC  
Flight crew:  
  Robert L. Crippen, CDR  
  Jon A. McBride, PLT  
  Kathryn D. Sullivan, MS  
  Sally K. Ride, MS  
  David L. Leestma, MS  
  Marc Garneau, PS (Canada)  
  Paul D. Scully-Power, PS (U.S. Navy civilian)

**FLIGHT 51-A**

Projected date: Nov. 2, 1984  
Orbiter: Discovery  
Payload: Dual option flight, Telesat-H, Syncom IV-1  
Flight Crew:  
  Frederick H. Hauck, CDR  
  David M. Walker, PLT  
  Anna L. Fisher, MS  
  Dale A. Gardner, MS  
  Joseph P. Allen, MS

**FLIGHT 51-C**

DOD MISSION
FLIGHT 51-B

Projected date: Jan. 17, 1985
Orbiter: Discovery
Payload: Spacelab 3
Flight Crew:
  Robert F. Overmyer, CDR
  Frederick D. Gregory, PLT
  Don L. Lind, MS
  Norman E. Thagard, MS
  William E. Thornton, MS
  Lodewijk van den Berg, PS, (EG&G Corp.)
  Taylor G. Wang, PS (Jet Propulsion Laboratory)

FLIGHT 51-E

Projected date: Feb. 12, 1985
Orbiter: Challenger
Payload: Telesat-I, TDRS-B
Flight Crew:
  Karol J. Bobko, CDR
  Donald E. Williams, PLT
  M. Rhea Seddon, MS
  Jeffrey A. Hoffman, MS
  S. David Griggs, MS
  French payload specialist

FLIGHT 51-D

Projected date: March 18, 1985
Orbiter: Discovery
Payload: LDEF-1 Retrieval, Syncom IV-3
Flight crew:
  Daniel C. Brandenstein, CDR
  John O. Creighton, PLT
  Shannon W. Lucid, MS
  John M. Fabian, MS
  Steven R. Nagel, MS
  Hughes payload specialist

FLIGHT 51-F

Projected date: April 17, 1985
Orbiter: Challenger
Payload: Spacelab 2
Flight crew:
  Charles G. Fullerton, CDR
  S. David Griggs, PLT
  F. Story Musgrave, MS
  Anthony W. England, MS
  Karl G. Henize, MS
  Loren W. Acton, PS (Lockheed)
  John-David Bartoe, PS (U.S. Navy civilian)
**FLIGHT 51-G**

Projected date: May 30, 1985  
Orbiter: Columbia  
Payload: Ease-Access, Telstar-3D, Arabsat-A, Morelos-A  
Flight crew:  
  Joe H. Engle, CDR  
  Richard O. Covey, PLT  
  James van Hoften, MS  
  John M. Lounge, MS  
  William F. Fisher, MS

**FLIGHT 51-L**

Projected date: July 2, 1985  
Orbiter: Challenger  
Payload: EOS-1, TDRS-C, OASIS  
Flight crew:  
  Brewster H. Shaw Jr., CDR  
  Bryan D. O'Connor, PLT  
  Mary L. Cleave, MS  
  Sherwood C. Spring  
  Jerry L. Ross (MS)

**FLIGHT 61-A**

Projected date: Oct. 14, 1985  
Orbiter: Columbia  
Payload: Spacelab D-1  
Flight crew:  
  Henry W. Hartsfield, CDR  
  Steven R. Nagel, PLT  
  James F. Buchli, MS  
  Guion S. Bluford, Jr., MS  
  Bonnie J. Dunbar, MS

Payload specialists:  
  Reinhard Furrer (DFVLR) (German)  
  Ernst Messerschmid (DFVLR) (German)  
  Wubbo Ockels (DFVLR) (Dutch)
FLIGHT 51-H

Projected date: November 27, 1985
Orbiter: Atlantis
Payload: EOM-1
Flight crew:
Vance D. Brand, CDR
Michael J. Smith, PLT
Robert C. Springer, MS
Owen K. Garriott, MS
Claude Nicoller, MS
Payload specialists:
Michael L. Lampton
Byron K. Lichtenberg (MIT)

FLIGHT 61-D

Projected date: Jan. 28, 1986
Orbiter: Columbia
Payload: Spacelab 4
Flight crew:
John M. Fabian, MS
James P. Bagian, MS
M. Rhea Seddon, MS
(commander, pilot and payload specialists to be assigned)

FLIGHT 61-E

Projected date: March 6, 1986
Orbiter: Columbia
Payload: Intelsat VI-1, Astro-1
Flight crew:
(commander and pilot to be assigned)
Robert A.R. Parker, MS
David C. Leestma, MS
Jeffrey A. Hoffman, MS

STANDBY CREW
Karol J. Bobko, CDR
Ronald J. Grabe, PLT
Richard M. Mullane, MS
Robert L. Stewart, MS

# # #
NOTE TO EDITORS/NEWS DIRECTORS

CORRECTION TO AMPTE PRESS KIT

The AMPTE Press Kit, and an earlier Notice To Editors/News Directors, inadvertently carried the wrong number designation for this upcoming Delta mission. The AMPTE payload will be flown on Delta 175, not Delta 176.

While the Delta 176 designation was originally that planned for the AMPTE mission, the number reverted to Delta 175 when the Galaxy C mission was delayed in June. Delta rocket launches are number sequentially, so this mission will be the one hundred and seventy fifth of a Delta vehicle, hence the designation Delta 175.

Please correct your Press Kit

# # #

August 1, 1984
NOTE TO EDITORS/NEWS DIRECTORS

EARTH RADIATION BUDGET SATELLITE VIEWING SET FOR AUGUST 14

KENNEDY SPACE CENTER, Fla. -- The Earth Radiation Budget Satellite (ERBS), scheduled to fly aboard the Space Shuttle Orbiter Challenger during the 41-G mission this October, will be available for viewing by the press on Tuesday, Aug. 14, 1984 at 11 a.m.

This satellite, with its earth radiation budget experiments and instrumentation, will become part of a three-spacecraft system with two orbiting NOAA satellites. Measurements will be taken on the amount of solar radiation received and given up by different regions of the Earth. ERBS will be deployed into space by Challenger's remote manipulator arm.

ERBS mission managers will be on hand to discuss spacecraft functions and mission objectives.

News media representatives who wish to attend the viewing should be at the Complex 39 press site no later than 10:30 a.m. Tuesday. Transportation to and from Hangar AE at the Cape Canaveral Air Force Station, where the spacecraft is being processed for launch, will be provided. News media representatives without a permanent press badge should make access arrangements by calling the News Center at (305) 867-2468.

August 7, 1984
KENNEDY SPACE CENTER, Fla. - Ten "sharp" Central Florida students have spent the summer working at the John F. Kennedy Space Center to prepare themselves for the stiff competition in obtaining high technology jobs.

The fields of work included electronics, biology, materials testing, microchemical analysis, digital design and computers, and fiber optics as well as a number of engineering disciplines.

These 10 Central Florida high school students are part of NASA's 1984 Student High School Apprenticeship Research Program (SHARP), which is aimed at encouraging bright students to choose technical careers through work application in science and engineering fields.

Students in the highly competitive program, which was started in 1980, were selected on the basis of grade point average, and teacher and counselor recommendations. Only 10 positions are filled each summer and a total of 70 students applied for the program this year.

The students received on-the-job training by working a 40-hour week under the direction of KSC engineers and scientists who act as mentors during the two-month program, which is sponsored by KSC's Education and Awareness Branch of Public Affairs. The mentors spent many hours with the students, working closely with them in their daily job activities and on research projects which were assigned to them at the beginning of the program, providing guidance and consultation.

At the end of the apprenticeship, on Friday, August 10, they will make oral presentations to an audience of mentors, parents, high school science teachers, center officials, and the faculty coordinator for the program.
Special activities during the program have included a tour of Kennedy Space Center facilities, films and seminars on the making and the processing of the Space Shuttle, and various enrichment programs. The students received a six-week introduction to the art of public speaking this summer by the KSC Toastmasters organization, which will help them in their final presentations.

Barbara Grant, a Winter Park High School chemistry teacher who has served as faculty coordinator for the program for the past two years, noted that the SHARP program can help the students make a more decisive career choice. "They find out what they are getting into before they take the plunge," she said.

Grant pointed out that a survey which she has conducted with previous SHARP students has revealed that the majority of them continued to pursue science and engineering careers once they entered college. "Some of the knowledge and skills they pick up here really help them not only from the educational standpoint, but also in learning to communicate and relate to people better. I see most of the students in the program grow up in a very short time. All of this helps give them an edge in competing for future opportunities and jobs."

Lisa Goodwin, a student from Palm Bay High School, worked in the physiological stress laboratory of the Biomedical Office. "Before I came here, I hadn't decided what I wanted to do. Now I know I want to go to medical school and work in the area of research rather than practice medicine," said Lisa.

A Winter Park High School student, Darnell Boucher, said, "Miss Grant talked to me about coming into the program for two summers before I did. I've been shaky about my career goals, but I had the chance to assist in the actual testing of a new form of insulation that might be used on future Space Shuttles. Now I've decided not only that I want to go into engineering, but that I want to be a mechanical engineer," she says.

Students participating in this year's program were Nancy Cronin, Eau Gallie High School, Melbourne; Lisa Goodwin, Palm Bay High School, Palm Bay; Eva Long, Satellite Beach High School, Satellite Beach; Ann Devereaux, Rockledge High School, Rockledge; Linda Lee, Boone High School, Orlando; Glenn Semmel, Lyman High School, Longwood; and Julie Baker, Darnell Boucher, and Bela Sheth, Winter Park High School, Winter Park.

-30-

Aug. 8, 1984
AUGUST 29 SET AS LAUNCH DATE FOR SHUTTLE MISSION 41-D

The National Aeronautics and Space Administration announced today the 41-D Space Shuttle mission has been scheduled for launch from the Kennedy Space Center, Fla., Aug. 29 at approximately 8:35 a.m. EDT with landing on Sept. 4, 6:31 a.m. PDT, at Edwards Air Force Base, Calif.

The six-day mission will be aboard the orbiter Discovery and will consist of payloads from previously scheduled flights 41-D and 41-F.

The combined mission cargo will consist of three communication satellites--the Hughes LEASAT, Satellite Business Systems' SBS-D, the AT&T Telstar 3-C, and the OAST-1 (NASA's Office of Aeronautics and Space Technology) collapsible solar array. Also on board will be the McDonnell Douglas electrophoresis system.

The crew for mission 41-D is the six member team of Commander Henry Hartsfield, Pilot Michael Coats, three mission specialists: Judith Resnik, Steven Hawley and Richard Mullane, and Payload Specialist Charles Walker, a McDonnell Douglas engineer.

-end-
KSC RELEASE NO: 153-84

WATERWAY BRIDGE OPENINGS TO BE CONTROLLED ON 41-D LAUNCH DAY

KENNEDY SPACE CENTER, Fla.-- The opening and closing of bridges over waterways surrounding the Kennedy Space Center will be strictly controlled during the hours immediately before and after the launch of the Space Shuttle Discovery on its first mission.

The launch is now scheduled for 8:35 a.m. on Wednesday, Aug. 29, but the restrictions will apply on subsequent launch dates should a delay be encountered.

The U.S. Coast Guard's Seventh District in Miami has given KSC authority to restrict the operation of the bridges from three hours before launch, if needed, until three hours after liftoff to facilitate the flow of vehicular traffic in and out of the space center.

Beginning at T-3 hours, bridges will be opened for five minutes every half-hour. They will remain closed from T-60 minutes until T plus 90 minutes. Beginning at T plus 90 minutes, they will be opened for five minutes every half hour until T plus three hours, at which time normal opening procedures will be resumed.

Bridges to be affected by these regulations include:
* - The Canaveral Harbor/Barge Canal Bridges at State Road 3 on Merritt Island, and State Road 401 at Port Canaveral.

* - The Intercoastal Waterway bridges over the Indian River at Addison Point (NASA Causeway).

* - The Banana River Bridge between KSC and Cape Canaveral Air Force Station (NASA Causeway East).

The bridge over Haulover Canal, which links the Indian River with Mosquito Lagoon, will be oriented in an open position at approximately T-1 day to halt traffic, but will lowered to its normal position shortly after launch.

# # #

Aug. 20, 1984
BOAT TRAFFIC NEAR KSC WILL BE RESTRICTED DURING 41-D LAUNCH

KENNEDY SPACE CENTER, Fla. — Safety considerations require that certain areas of the Atlantic Ocean and shallow lagoons near and on Kennedy Space Center be closed to boat traffic during the upcoming Space Shuttle launch.

Coast Guard vessels will be patrolling the secured areas. Boaters who have any questions about where they will be permitted to travel the morning of the launch may contact the Range Control Center on Channel 12 VHF-FM, or the U.S. Coast Guard Station at Port Canaveral on Channel 16 VHF-FM, for detailed information. Advisories will be broadcast.

The restricted areas are as follows:

In the Atlantic, boat travel is restricted anywhere south of an imaginary line drawn eastward from Haulover Canal and extending three miles out to sea. No boat travel is permitted north of the Port Canaveral buoy lines. The boundary also extends three miles out. Boaters are advised that a launch danger zone rests within the same boundaries for a distance of 180 miles offshore.

In Mosquito Lagoon, no boat traffic is allowed in that portion of the lagoon to the south of Haulover Canal.

For portions of the Indian River north of Titusville, boat traffic is generally restricted to the areas near the channel or west of the channel. Coast Guard patrol boats will secure areas near the eastern shoreline.

For areas of the Indian River south of Titusville, boat travel will be restricted from entering Banana Creek or from encroaching on the eastern shoreline.

In the Banana River, boats will not be allowed north of marker 35 or east of the marked channel.

These restrictions on boat travel commence at T-3 days, and will be lifted four hours after the launch. The only exception is that the 3-mile offshore security zone in the Atlantic is enforced whenever a Shuttle vehicle is on the pad.

Aug. 20, 1984
KENNEDY SPACE CENTER, Fla. -- During the launch of the Orbiter Discovery on the twelfth Space Shuttle flight, the skies in the vicinity of the space center will be reserved for official mission aircraft and will be off-limits to general aviation pilots.

The possibility of mid-air collisions and the other hazards associated with a Space Shuttle launch and landing dictate that surrounding airspace be cleared.

All restricted areas associated with the space center will be activated for the launch. The areas immediately surrounding the space center are expected to be extremely congested with both controlled and uncontrolled air traffic. The more prudent pilot may wish to remain grounded during the Shuttle launch rather than risk the chance of a collision or a violation of Federal Aviation regulations.

Violations may result in sanctions against pilots, including suspension or revocation of pilot privileges.

Pilots who find it absolutely necessary to be airborne on the morning of the launch are advised to stay well west of the Indian River and seek traffic advisories from the Patrick Approach Control (VHF 118.4), TICO (TIX) Airport Tower (VHF 118.9), or Melbourne FSS on discrete frequencies VHF 122.6 or 123.6.

###

Aug. 20, 1984
PLAYALINDA BEACH TO CLOSE FOR SHUTTLE LAUNCH

KENNEDY SPACE CENTER, Fla. -- The Cape Canaveral National Seashore's Playalinda Beach, located on NASA property just north of Launch Complex 39, will be closed to the public starting Sunday, Aug. 26, at 8 p.m. for the Space Shuttle 41-D launch.

Safety considerations require closing the beach during the Space Shuttle launch countdown, liftoff, and landing. The first flight of the orbiter Discovery is scheduled for launch no earlier than 8:35 a.m. Wednesday, Aug. 29.

The beach will re-open approximately two hours after a successful liftoff.

Badged space center employees will be allowed to enter KSC via Gates 4TT (State Roads 402 and 406) and Gate 6TT, located on State Rd. 3 south of the Haulover Canal until 8:05 a.m. the day of the launch.

Anyone planning an excursion to Playalinda Beach around the time of a scheduled Shuttle launch or landing should check on whether the beach is open by calling the Canaveral National Seashore at 867-4675. Certain pre-launch operations, such as tank fueling tests, can also require that the beach be closed.

Aug. 20, 1984
KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded Computer Sciences Corporation, Falls Church, Va., a $2,111,098 contract extension which brings the total value of the existing contract to $4,264,300.


CSC will provide instrumentation and computation services used in support of tests and launches of the Delta, Atlas/Centaur, and Shuttle/Centaur vehicles conducted at NASA facilities at Cape Canaveral Air Force Station.

The Kennedy Space Center is NASA's prime launch and landing site for the Space Shuttle. The next flight, which will be the second flight into space for the Space Shuttle Orbiter Discovery, is set for lift-off no earlier than Nov. 7 at 8:18 a.m. EDT.

After deploying two communications satellites into orbit, two other satellites that were launched into unusable orbits earlier this year will be retrieved from space on this mission.

October 24, 1984
For Release: IMMEDIATE

Mitch Varnes
(305) 867-2468

KSC RELEASE NO. 184-84

ALABAMA CONSTRUCTION FIRM AWARDED MULTI-MILLION DOLLAR CONTRACT

KENNEDY SPACE CENTER, FLA.- NASA's John F. Kennedy Space Center has awarded Doster Construction Company, Inc., of Birmingham, Ala., a $7,496,000 contract for the design and construction of a Hazardous Cargo Servicing Facility.

Under the terms of the fixed-price contract, Doster Construction Company is responsible for completing all work on the facility within 420 days after notification to proceed with operations.

The Hazardous Cargo Servicing Facility will be located in the space center's industrial area and will be manned by both NASA and contractor employees. The facility will include an airlock, a highbay and a clean room-type section. The structure will be used to process those Space Shuttle payloads, which due to their hazardous nature, are incapable of being processed in usual facilities.

Kennedy Space Center is the prime launch and landing site for NASA's reusable Space Shuttle, scheduled for launch no earlier than Nov. 7, 1984. The 51-A mission will be the second flight into space for the orbiter Discovery.

# # # #

Oct. 25, 1984
NOTICE TO NEWS DIRECTORS/EDITORS

NATO III-D PRESS CONFERENCE SET FOR NOVEMBER 2

KENNEDY SPACE CENTER, Fla. -- The launch of NATO III-D has been rescheduled for liftoff no earlier than 7:26 p.m. EST on Sunday, Nov. 4 from Delta launch pad 17A. The launch window for that day extends until 9:13 p.m. EST.

Launch was originally set for Oct. 18, but was postponed so that four traveling wave tube amplifiers (TWTAs) could be removed, repaired, replaced and retested.

The pre-launch press conference with launch and program officials is set for Nov. 2 at 2 p.m. at the E&O Building, Cape Canaveral Air Force Station.

News media representatives who plan to attend should be at the press site dome by 1:30 p.m. on Nov. 2. Press representatives without permanent KSC credentials should make access arrangements ahead of time by contacting the news center at 867-2468.

On launch day, permanently badged press can drive directly to the Press Site 1 on Mission Control Road, at the CCAFS, beginning at 6 p.m. EST. Temporary badges can be obtained at Gate 1 at the CCAFS on launch day from 6 - 6:30 p.m. EST.

# # #

Oct. 26, 1984
BOAT TRAFFIC NEAR KSC WILL BE RESTRICTED DURING 51-A LAUNCH

KENNEDY SPACE CENTER, Fla. — Safety considerations require that certain areas of the Atlantic Ocean and shallow lagoons near and on Kennedy Space Center be closed to boat traffic during the upcoming Space Shuttle launch.

Coast Guard vessels will be patrolling the secured areas. Boaters who have any questions about where they will be permitted to travel the morning of the launch should monitor Channel 16 VHF-FM, for detailed information. Advisories will be broadcast every hour on the hour beginning at T-3 days. The restricted areas are as follows:

In the Atlantic, boat travel is restricted anywhere south of an imaginary line drawn eastward from Haulover Canal and extending three miles out to sea. No boat travel is permitted north of the Port Canaveral buoy lines. The boundary also extends three miles out. Boaters are advised that a launch danger zone rests within the same boundaries for a distance of 180 miles offshore.

In Mosquito Lagoon, no boat traffic is allowed in that portion of the lagoon to the south of Haulover Canal.

For portions of the Indian River north of Titusville, boat traffic is generally restricted to the areas near the channel or west of the channel. Coast Guard patrol boats will secure areas near the eastern shoreline.

For areas of the Indian River south of Titusville, boat travel will be restricted from entering Banana Creek or from encroaching on the eastern shoreline.

In the Banana River, boats will not be allowed north of marker 35 or east of the marked channel.

These restrictions on boat travel commence at T-3 days, and will be lifted four hours after the launch. The only exception is that the 3-mile offshore security zone in the Atlantic is enforced whenever a Shuttle vehicle is on the pad.

# # #

Oct. 29, 1984
KSC RELEASE NO: 189-84

WATERWAY BRIDGE OPENINGS TO BE CONTROLLED ON 51-A LAUNCH DAY

KENNEDY SPACE CENTER, Fla.-- The opening and closing of bridges over waterways surrounding the Kennedy Space Center will be strictly controlled during the hours immediately before and after the launch of the Space Shuttle Discovery on its second mission.

The launch is now scheduled for 8:18 a.m. on Wednesday, Nov. 7, but the restrictions will apply on subsequent launch dates should a delay be encountered.

The U.S. Coast Guard's Seventh District in Miami has given KSC authority to restrict the operation of the bridges from three hours before launch, if needed, until three hours after liftoff to facilitate the flow of vehicular traffic in and out of the space center.

Beginning at T-3 hours, bridges will be opened for five minutes every half-hour. They will remain closed from T-60 minutes until T plus 90 minutes. Beginning at T plus 90 minutes, they will be opened for five minutes every half hour until T plus three hours, at which time normal opening procedures will be resumed.

Bridges to be affected by these regulations include:

* - The Canaveral Harbor/Barge Canal Bridges at State Road 3 on Merritt Island, and State Road 401 at Port Canaveral.

* - The Intercoastal Waterway bridges over the Indian River at Addison Point (NASA Causeway).

* - The Banana River Bridge between KSC and Cape Canaveral Air Force Station (NASA Causeway East).

The bridge over Haulover Canal, which links the Indian River with Mosquito Lagoon, will be oriented in an open position at approximately T-1 day to halt traffic, but will lowered to its normal position shortly after launch.

# # #

Oct. 29, 1984
KENNEDY SPACE CENTER, Fla. -- During the launch of the Orbiter Discovery on its second flight into space, the skies in the vicinity of the space center will be reserved for official mission aircraft and will be off-limits to general aviation pilots.

The possibility of mid-air collisions and the other hazards associated with a Space Shuttle launch and landing dictate that surrounding airspace be cleared.

All restricted areas associated with the space center will be activated for the launch. The areas immediately surrounding the space center are expected to be extremely congested with both controlled and uncontrolled air traffic. The more prudent pilot may wish to remain grounded during the Shuttle launch rather than risk the chance of a collision or a violation of Federal Aviation regulations.

Violations may result in sanctions against pilots, including suspension or revocation of pilot privileges.

Pilots who find it absolutely necessary to be airborne on the morning of the launch are advised to stay well west of the Indian River and seek traffic advisories from the Patrick Approach Control (VHF 118.4), TICO (TIX) Airport Tower (VHF 118.9), or Melbourne FSS on discrete frequencies VHF 122.6 or 123.6.

# # #

Oct. 29, 1984
KENNEDY SPACE CENTER, Fla. -- The Cape Canaveral National Seashore's Playalinda Beach, located on NASA property just north of Launch Complex 39, will be closed to the public starting Sunday, Nov. 4, at 6 p.m. for the Space Shuttle 51-A launch.

Safety considerations require closing the beach during the Space Shuttle launch countdown, liftoff, and landing. The second flight of the orbiter Discovery is scheduled for launch no earlier than 8:18 a.m. Wednesday, Nov. 7.

The beach will re-open approximately two hours after a successful liftoff.

Badged space center employees will be allowed to enter KSC via Gate 4TT (State Roads 402 and 406) until 8:03 a.m. the day of the launch. Gate 6TT, located on State Rd. 3 south of the Haulover Canal, will close at 4 p.m. the day before launch and re-open approximately 20 minutes after a successful launch.

Anyone planning an excursion to Playalinda Beach around the time of a scheduled Shuttle launch or landing should check on whether the beach is open by calling the Canaveral National Seashore at 867-0634. Certain pre-launch operations, such as tank fueling tests, can also require that the beach be closed.

Oct. 29, 1984
BIONETICS CORPORATION AWARDED CONTRACT EXTENSION

KENNEDY SPACE CENTER, FLA. - NASA's John F. Kennedy Space Center has awarded The Bionetics Corporation, Hampton, Va., a $2,030,934 contract extension for laboratory support services to the KSC Biomedical Directorate.

Under the terms of the contract, Bionetics will continue to operate the center's physiological stress laboratory and provide support for the microbiological laboratory.

Bionetics will be responsible for monitoring the natural environment at the center, and for carrying out an environmental monitoring program for launch and landing operations at KSC.

Bionetics will also support the life sciences research being conducted at the Hangar L facility on the Cape Canaveral Air Force Station.

In addition to the work at KSC, Bionetics will provide laboratory support services for the Baseline Data Collection facilities at Edwards Air Force Base, Calif.

The cost plus fixed-fee award covers the period from Oct. 31, 1984 through Oct. 30, 1985, and brings the cumulative total of the Bionetics contract to $5,886,636.

Kennedy Space Center is the prime launch and landing site for NASA's reusable Space Shuttle, scheduled for launch no earlier than Nov. 7, 1984. The 51-A mission will be the second trip into space for the orbiter Discovery.

# # # # #

Nov. 5, 1984
Kennedy Space Center, Fla. -- NASA's John F. Kennedy Space Center has awarded Mohawk Construction and Erectors, Inc. of Titusville, Fla., a $264,887 contract for refurbishing Launch Complex 36 Ready Room Offices at Cape Canaveral Air Force Station.

Under the terms of the contract, Mohawk Construction and Erectors, Inc. will modernize the interior, replace the air conditioning system, and modify walls, ceilings and floor coverings at Complex 36. Launch Complex 36 is used to launch the Atlas Centaur booster, NASA's most powerful unmanned rocket.

The fixed price contract, set aside for award to a small business firm, calls for Mohawk Construction and Erectors, Inc. to complete all work within 120 days after receipt of notice to proceed with operations.

Launch Complex 36 Ready Room Offices house engineering personnel during pre-launch checkout activities.

Kennedy Space Center is the nation's major launch facility for manned and unmanned spaceflight. It is the primary launch and landing site for the Space Shuttle.

Nov. 26, 1984
ROCKLEDGE FIRM WINS BID TO CONSTRUCT OPERATIONS SUPPORT FACILITY

KENNEDY SPACE CENTER, FLA. - NASA's John F. Kennedy Space Center has awarded Butler Construction Company, Rockledge, Fla., a $542,900 contract for the construction of an Operations Support Facility.

Under the terms of the contract, Butler Construction will provide site clearing and utilities installations for the Operations Support Facility which will be located in the Launch Complex 39 area of the Kennedy Space Center.

The Operations and Support Facility will be used in support of Department of Defense operations at the center.

The fixed price contract, one set aside for award to a small business, calls for Butler Construction to complete all work on the facility by April 11, 1985.

Kennedy Space Center is the prime launch and landing site for NASA's fleet of Space Shuttle orbiters, now performing operational missions to and from space for a variety of scientific, commercial and government customers.

# # # # #

Nov. 28, 1984
KENNEDY SPACE CENTER, Fla. -- Kennedy Space Center's Productivity Council is determined to help Brevard County "Stay Alive in '85" by kicking off an awareness campaign on Dec. 7.

"The campaign is a unified effort to make everyone aware of the tragedies that are occurring on our highways," said Pat Oliver, chairman of the Council's campaign.

With approximately 14,000 permanent and temporary employees, KSC is one of the most heavily populated workplaces in Brevard County...and a considerable number of those employees travel many miles of highway within and beyond the county's boundaries.

According to the Florida Highway Patrol, Brevard County experienced 82 fatalities in 1983 -- an improvement over 1982, and 1981 when fatalities totaled 96 and 94 respectively. Brevard has already experienced 101 traffic-related deaths as of Nov. 30 of this year with the Christmas and New Year's Eve holidays still ahead.

"Stay Alive in '85" will work to reverse this threatening trend, by issuing bumper stickers and other safe-driving reminders. The bumper stickers, Oliver said, are intended both as a reminder to KSC employees, and as "our statement to all drivers that we at KSC are concerned."

December 3, 1984
KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded Holloway Corp., Titusville, Fla., a contract valued at $2,306,477 for the relocation of existing fire extinguishing equipment.

The fixed-priced contract was effective Nov. 20, and will extend through Sept. 22, 1985.

Under the terms of the contract, Holloway will remove two pumps from the Pad-B pump house, and a one million gallon water tank behind the Operations and Checkout Building. This equipment will be installed in the Hypergolic Maintenance Facility area and will be used in a new fire extinguishing system.

The contract agreement establishes that Holloway is responsible for the construction, installation and testing of a complete Hypergolic Maintenance and Cargo Processing Area fire extinguishing system.

The Kennedy Space Center is NASA's prime launch and landing site for the Space Shuttle. To date, there have been 14 missions of the Space Transportation System since the first one, launched on April 12, 1981. The last five missions were conducted this year.

Dec. 5, 1984
NASA News

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

For Release:
Immediate

RELEASE NO. 223-84

NOTICE TO EDITORS/NEWS DIRECTORS:

JON MC BRIDE TO APPEAR AT OPENING OF MELBOURNE SPACE ART SHOW

KENNEDY SPACE CENTER, Fla. - Astronaut Jon McBride, pilot for the Space Shuttle 41-G mission flown in October, will be on hand for the preview opening on Jan. 4 of a space art exhibit to be on public display at the Brevard Art Center and Museum in Melbourne through early February.

The 70-painting exhibition, entitled "The Artist and the Space Shuttle", will remain at the Melbourne museum at 1510 Highland Ave. through Feb. 10.

NASA has commissioned artists to render their impressions of key events in the space program for more than two decades. "The Artist and the Space Shuttle" is a portion of the NASA Shuttle collection covering the years 1977 to 1982 and the development and early flights of the Space Transportation System.

The paintings are in a number of media - including oils, acrylics, pastels and water colors - and document all aspects of the Space Shuttle program from detailed studies of Columbia's launch preparations to interpretive landscapes of the space center itself.

Astronaut McBride will meet with the press at the museum at 3 p.m. Friday, Jan. 4 for an informal news conference. He will also attend the preview showing for museum patrons from 6:30 - 8:30 p.m. that evening.

Additional information on the NASA space art exhibition at the Melbourne museum may be obtained by calling Caryl Wright at 254-7782 (museum) or 777-3543 (home).

# # # # #

Dec. 21, 1984
EG&G WINS CONTRACT EXTENSION VALUED AT MORE THAN $90 MILLION

KENNEDY SPACE CENTER, Fla. -- NASA's John F. Kennedy Space Center has awarded EG&G Florida, Inc., Cocoa, Fla., a one year, $90,433,613 extension to its existing contract for base operations services.

The extension covers the period of Jan. 1, through Dec. 31, 1985. The extension brings the cumulative cost of the original contract to $275,199,168. This is the second one-year extension to the Base Operations Contract awarded EG&G in January 1983.

EG&G Florida, Inc. is part of the Government Services Division of EG&G Inc., based in Wellesley, Mass.

Under the terms of the contract extension, EG&G Florida, Inc. will continue to provide institutional and technical support services such as utilities, facilities, administrative services, technical operations, and health and protective services at Kennedy Space Center.

Kennedy Space Center is the nation's major launch facility for manned and unmanned spaceflight. It is the primary launch and landing site for the Space Shuttle.

Dec. 21, 1984