KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO:

FOR RELEASE: January 4, 1971

JAN 5 1971

APOLLO 14 STATUS REPORT

Apollo 14 astronaut crew activities include physical examination at MSC, guidance and navigation system briefing, contingency (one-man) EVA simulation on January 5; lunar descent flight simulations with flight controller participation on January 6; lunar orbit and descent orbit insertion simulations with the flight controllers on January 7; EVA simulation with the flight controllers on January 8; and press interviews on January 9 at MSC

Hypergolic propellants -- those which ignite spontaneously when the fuel and oxydizer meet -- will be loaded in the Apollo 14 spacecraft and in the auxiliary propulsion system of the Saturn third stage from January 4 to 8. Then RP-1 fuel will be loaded aboard the Saturn V first stage on January 9.

Also during the week, spacecraft pyrotechnics will be installed, Saturn first stage engines will be leak-checked and flight stowage of the modularized equipment stowage assembly in the lunar module descent stage will be accomplished.

Preparations of the Apollo 14 space vehicle continue to proceed satisfactorily for a scheduled launching January 31 from Kennedy Space Center Launch Complex 39.

Fifteen potential Skylab astronauts are scheduled to visit Sacramento Peak Observatory, Sunspot, New Mexico for solar telescope training on January 6 and 7.

The second stage for the 13th Saturn V rocket departed the NASA Mississippi Test Facility December 30 aboard the barge Poseidon for the Kennedy Space Center. The stage is scheduled to arrive January 5 and go into temporary storage in the VAB The stage is planned for use in the Skylab program as part of the Saturn V rocket to place the orbital workshop into Earth orbit in late 1972.

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KSC
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FEB 22 1971

news release

RELEASE NO: KSC-30-71
FOR RELEASE: February 18, 1971

SPACEPORT AWARDS CONTRACT TO STUDY METHODS FOR DETECTING FLUID LEAKAGE

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center (KSC) has awarded a six-month contract to Dynamatec Corporation of Cocoa Beach for a study of methods to improve detection of leakage in fluid systems.

The results of this $49,584 study will be incorporated in KSC's overall study program related to handling the checkout, launch and refurbishment of the reusable two-stage shuttle, a proposed craft that would be launched vertically and landed horizontally.

KSC, the designated launch site for Apollo and Skylab launches, is a major contender as the Center for shuttle activities.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

FEB 22 1971
BY4
#87

RELEASE NO: KSC-31-71
FOR RELEASE: February 19, 1971

ACCESS TO VISITOR INFORMATION CENTER VIA STATE ROAD 3 TO RESUME FEB. 22

KENNEDY SPACE CENTER, Fla.--State Road 3, Merritt Island, which provides a direct route to and from the Kennedy Space Center, will be available to tourists daily commencing Monday, February 22, it was announced today by the Air Force Eastern Test Range and NASA.

Access to NASA's Visitor Information Center, from which bus tours are conducted, will then be available either via Gate 3 connected with the mainland by NASA Causeway or via Gate 2 which controls the traffic entering and departing via SR 3.

Gate 2 will be open from 8:00 a.m. to 6:00 p.m. daily including Sundays and holidays.

The Space Center inaugurated a test May 30, 1970 to evaluate tourist utilization of the SR 3 route. The flow of visitor autos was sufficient to justify continuing the arrangement until Dec. 18, 1970 when a bomb threat incident occurred during preparations for the launch of Apollo 14. The gate was then closed to the public.

Dr. Kurt H. Debus, Center Director, told a meeting of civic leaders and the press January 8, 1971, that Gate 2 would be opened following the Apollo 14 mission if it was determined that the bomb threat situation permitted this action.

Sunday drive-through tours of Cape Kennedy Air Force Station and the Kennedy Space Center were resumed February 7, 1971 as a first step in restoring the access system which operated successfully from May to December last year.

Should operational considerations again dictate tighter access controls, KSC would be compelled to close Gate 2.

Visitors arriving at the Gate 2 entrance prior to 8:00 a.m. daily may park in an adjacent area until the commuting traffic has passed the gate.

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KSC
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-33-71
FOR RELEASE: February 25 1971

FIVE SPACEPORT PERSONNEL TO RECEIVE HIGH NASA AWARDS FOR APOLLO WORK

KENNEDY SPACE CENTER, Fla.--Walter J. Kapryan, Director of Launch Operations at the Kennedy Space Center (KSC), and four other Spaceport employees will receive high NASA awards Saturday for their outstanding contributions to the Apollo 13 and 14 missions.

The Apollo 13/14 Awards Ceremony will be held at 10 a.m. at NASA's Manned Spacecraft Center.

Kapryan, named Director of Launch Operations in September 1969 after serving as Deputy Director since January 1968, will receive NASA's highest award, the Distinguished Service Medal. He has served as Launch Director for Apollos 12, 13 and 14.

The Exceptional Service Medal will be presented to the following KSC employees:

Graydon F. Corn, Chief of the Propellants Branch, Launch Vehicle Operations; Charles D. Gay, Deputy Chief of the Operations Division, Spacecraft Operations; F. Terry Williams, Chief of the Fluid Systems Branch, Spacecraft Operations; and Ralph A. Yorio, Chief of the Malfunction Analysis Branch, Support Operations.

Prior to being named to the first Launch Operations post, Kapryan was Assistant Apollo Spacecraft Program Manager at KSC, representing the Manned Spacecraft Center, assuring close coordination between the two centers in spacecraft operations.

During the early phases of the Gemini Program, Kapryan was responsible within the Gemini Program Office for test planning and determining requirements for spacecraft checkout equipment to be located at KSC.

In 1963 he established and headed the MSC Gemini Program Office at KSC. He participated in the preparation and countdown of all 10 manned Gemini flights and the Apollo Saturn IB and Saturn V missions.

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PUBLIC INFORMATION OFFICE, AREA CODE 305-867-2468

KSC
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

8X4
#27

RELEASE NO: KSC-34-71
FOR RELEASE: February 26, 1971

DR. AND MRS. KURT H. DEBUS TO LEAD KSC DELEGATION TO WHITE HOUSE DINNER

KENNEDY SPACE CENTER, Fla.--Dr. Kurt H. Debus, Center Director, and Mrs. Debus will lead the delegation from the Kennedy Space Center at a White House dinner Monday evening, March 1st, at which the President will honor the Apollo 14 crew.

The KSC invitees include Miles Ross, Deputy Director, and Mrs. Ross; Walter J. Kapryan, Director of Launch Operations, and Mrs. Kapryan; and Raymond Clark, Director of Technical Support and Mrs. Clark.

Other NASA representatives and their wives who will attend were invited from the Manned Spacecraft Center, the Marshall Space Flight Center, Goddard Space Flight Center, and NASA Headquarters.

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-35-71
FOR RELEASE: March 1, 1971

KSC DEPUTY DIRECTOR MILES ROSS TO ADDRESS DIAMOND ASSOCIATION

KENNEDY SPACE CENTER, Fla.--Miles Ross, Deputy Director of the Kennedy Space Center (KSC), will address the 25th Anniversary Banquet of the Industrial Diamond Association in Boca Raton, Florida, Tuesday.

Attending the diamond convention will be representatives from over the United States, as well as from Japan, Germany, England and several other foreign nations.

Prior to being named the sole Deputy Director in 1970, Ross had held the position of Deputy Director, Center Operations, since 1967.

Prior to his assignment at KSC, Ross was a project manager of the Air Force Thor and Minuteman missile systems with TRW, Inc., Florida Operations, and later became Director of Flight Operations. He was subsequently named Manager of Florida Operations.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MAR 2 1971

news release

RELEASE NO: KSC-36-71
FOR RELEASE: March 1, 1971

TWO WILL REPRESENT SPACEPORT IN FEDERAL EMPLOYEE CONTEST

KENNEDY SPACE CENTER, Fla.--Two employees at the Kennedy Space Center (KSC) have been selected to represent the Spaceport in a contest sponsored by the Central Florida Federal Management Association in Orlando, Florida for the Federal Employee of the Year and the Handicapped Federal Employee of the Year.

Charles D. Gay, Operations Division of Spacecraft Operations, is the KSC representative in the first category and Lowell D. Fair, Computer System Analysis Branch of Information Systems, in the second category.

KSC Deputy Director Miles Ross will present the awards at the Federal Management Association's banquet at 7:30 p.m. March 5 in the Robert Meyer Hotel, Orlando.

The contest will be judged on the participants "outstanding contribution to the quality of the career service of the Federal Government."

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-37-71
FOR RELEASE: 3:00 p.m.
March 3, 1971

APOLLO 16 CREW SELECTED

The National Aeronautics and Space Administration today announced prime and backup crews for the Apollo 16 mission, scheduled for launch in March 1972.

Prime crewmen are John W. Young, Commander; Thomas K. Mattingly II, Command Module Pilot; and Charles M. Duke, Jr., Lunar Module Pilot. Backup crewmen, respectively, are Fred W. Haise, Jr., Stuart A. Roosa and Edgar D. Mitchell.

The lunar landing site for Apollo 16 has not yet been selected; however, it will not be in a mare area.

Mission duration will be approximately 12 days, including a lunar surface stay time of about 67 hours. Young and Duke will have three extravehicular activity periods on the lunar surface, totaling about 20 hours. They will use a Lunar Roving Vehicle (LRV).

An Apollo lunar surface experiment package (ALSEP) will be deployed and an extensive lunar orbital science program will be conducted. Mattingly will leave the command module during trans-Earth coast to retrieve a lunar orbital science film package from the service module.

Young, 40, is a Navy captain who will be making his fourth space flight. He has flown on Geminis 3 and 10 and Apollo 10. Apollo 16 will be his first lunar landing mission.

Mattingly, 34, a Navy lieutenant commander, has not yet flown in space. He was replaced as the prime command module pilot on Apollo 13 a few days before launch after being exposed to the German measles.

Duke, 35, an Air Force lieutenant colonel, also will be making his first space flight. He was backup lunar module pilot for Apollo 13.

Haise, 37, a civilian, was the lunar module pilot on the Apollo 13 mission. He served as backup lunar module pilot for Apollos 8 and 11.

-more-

Roosa, 37, is an Air Force lieutenant colonel. He was the command module pilot on the recently completed Apollo 14 mission.

Michell, 40, a Navy captain, was the lunar module pilot on Apollo 14. He served as backup lunar module pilot on Apollo 10.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-39-71
FOR RELEASE: March 4, 1971

APOLLO 15 ASTRONAUTS OUTLINE SCIENTIFIC MISSION TO LAUNCH TEAM

KENNEDY SPACE CENTER, Fla.--The Apollo 15 crew outlined a highly-complex lunar mission before about 1,000 members of the KSC launch team Thursday and Commander David Scott said, "With your help, we'll bring back enough data to keep the scientific community busy for 30 years."

Command Module Pilot Alfred Worden described the new photographic and scientific packages in the service module (SM) that will keep him busy while in lunar orbit, and Lunar Module (LM) Pilot James Irwin detailed the activities to be performed on the lunar surface.

Apollo 15 will be launched from Launch Complex 39's Pad A on July 26.

Scott lauded the KSC team for "doing a tremendous job on previous Apollo launches. Each launch is getting better and better.

The Commander said this mission would "probably be the greatest scientific exploration ever carried out by man. The vastly improved scientific returns will be almost overwhelming."

Apollo 15 will land in a small basin in the mountainous Hadley-Apennine region of the Moon, which is a great deal north of previous landing sites.

With the addition of this site, Scott said, the scientific station will provide a triangular arrangement with previous stations and allow scientists to better correlate their findings.

This mission has been extended to 12 days, compared with 9 and 10 days for earlier missions, and will include three extravehicular periods of approximately seven hours duration each. Also, the crew will have a lunar roving vehicle to transport them over the surface.

Scott said they would land from east to west and would have to "pull our feet up to go over and 11,000-foot mountain just west of the targeted site.

"We will land in a basin about one and one half kilometers short of Hadley Rille, which in terresterial terms means a meandering gorge."

Worden said the role of the command module pilot has changed.

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"He is still a taxi driver waiting for the other two guys to return," Worden said, "but now he must also carry out a detailed, precise orbital science mission.

"We will cover more of the lunar surface than previous missions as the orbital track shifts. We will get the first good pictures of areas not well photographed previously."

Worden said the new scientific bay in the service module is designed to allow scientists to correlate data on the lunar surface and environment from this site with data from earlier missions.

To accomplish this, the service module will carry three spectrometers, two cameras, a laser altimeter, a solar monitor and a particles and fields subsatellite which will operate in lunar orbit for one and one half to two years.

A mass spectrometer will be used to determine the composition of the atmosphere by identifying specific elements, while the other two spectrometers will be measuring gamma, alpha and X rays.

A 70 mm mapping camera with a 60-foot resolution will photograph the lunar features and the time the photos were taken and the altitude of the features will be recorded on the film.

An automatic panoramic camera with manual override capability will fill in the details of the lunar features down to within three or four feet.

Irwin said he and Scott would be able to extend out to eight kilometers from the lunar module by using the new lunar roving vehicle, a four-wheel, electric powered "Moon dune buggy."

"The rover allows us a longer stay time because we will expend less energy in getting about," he said.

"With the TV camera on the rover, all mankind will be able to watch us work."

He said the space suits have been changed to provide more mobility, "particularly waist mobility. We will be able to reach down and pick up rocks and to get in and out of the rover.

"We will have more consumables in our portable life support systems which will allow up to seven hours on each extravehicular activity."

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After landing, Irwin said they will sleep in order to rest before the first EVA.

"We will sleep when you sleep, work when you work," he told the launch team. "Thought you would appreciate that."

He said the first EVA will take them to the edge of Hadley Rille, which is 3,000 feet across and 600 feet deep.

"At first we thought about driving the rover down there," he said, "but then we thought we'd better not."

The second EVA will include a swing by a cratered area and the third back near the rille to "a possible volcanic area with very interesting features."

They will conduct a new experiment which will require Scott to drill two 10-foot-deep holes and emplace probes to measure the heat flow in and out of the lunar surface. The core from a third hole will be returned to Earth.

This heat flow experiment had been planned for the Apollo 13 mission, which was forced to return without landing on the Moon.

They will spend 67 hours on the lunar surface, 20 of which will be spent on the three EVA's.

Liftoff and rendezvous will be the same as on Apollo 14. The LM ascent stage will be impacted to the west of the Apollo 15 landing site.

The briefing was conducted under a mobile launcher platform in a high bay of the 525-foot-tall Vehicle Assembly Building (VAB) where the darkness was suitable for the slide presentation.

A cold wave which came in during the night had an ice-box like effect on the speakers and space workers, but the employees warmly applauded the crew who will ride the next rocket they prepare for launch.

"This is the first time I knew that the VAB had air conditioning," Scott observed.

# # #

KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MAR 11 1971

RELEASE NO: KSC-41-71
FOR RELEASE: March 10, 1971 p.m.

LRV FLIGHT MODEL DELIVERY

The first flight model lunar roving vehicle (LRV) will be formally delivered to the National Aeronautics and Space Administration in a special ceremony March 10 at the Kent (Wash.) Space Center of The Boeing Co., prime LRV contractor.

Actual delivery and shipment of the flight model will not occur until a few days later, but NASA and Boeing officials will be at the Kent plant March 10 for a review meeting on the status of the LRV.

Dr. Eberhard F. M. Rees, Director of the NASA Marshall Space Flight Center, Huntsville, Ala., will officially receive the first of three flight models on behalf of NASA. The Marshall Center is responsible for managing LRV development, testing and manufacture.

Ceremonial delivery will be made by O. C. Boileau, Boeing's group vice president for aerosapce, who will officiate at the brief ceremony. Also in attendance will be Marshall Center officials S. F. Morea, manager of the Lunar Roving Vehicle Program, and Richard G. Smith, Saturn Program manager.

The flight model LRV will be delivered and shipped to arrive at the NASA-Kennedy Space Center, Fla., March 15. There it will receive final checks and be stowed aboard the lunar module assigned to the Apollo 15 lunar exploration mission. The delivery will be two weeks before the contract delivery date of April 1.

Boeing received its contract in October 1969, less than 17 months ago. Complete design, development, manufacture, testing, and delivery of the new space vehicle have been accomplished in this record-making period.

During the delivery status review at Kent, NASA and Boeing officials will discuss the status of the LRV qualification program and acceptance tests; work still to be completed on the flight model, both at Kent and at the Kennedy center; shipment plans; and the readiness of KSC to receive the vehicle.

The Apollo 15 mission is set for launch July 26 on a 12-day, eight-hour journey that will land Astronauts David R. Scott and James B. Irwin in the Hadley-Apennines region of the Moon. While crewman Alfred M. Worden orbits the Moon in the command module, Scott and Irwin will make three traverses aboard the LRV to explore the lunar surface around their landing site.

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The LRV is a unique space vehicle, designed to enlarge the scope of lunar exploration by greatly increasing astronaut mobility during traverses. It will also allow crewmen to take more scientific equipment on their trips, and collect more lunar samples than on previous Apollo missions.

Because the LRV is a manned vehicle, reliability and simplicity in all systems have been the primary requirements of development. The four-wheel vehicle, constructed mainly of aluminum, will be capable of traveling across the Moon's surface at a speed of about eight miles an hour. Its power comes from two 36-volt batteries that operate simultaneously. If one battery fails, however, the LRV's entire electrical load can be switched to the remaining battery.

The vehicle is about 10 feet long, six feet wide, 45 inches high, and has a 7.5-foot wheelbase. Each of the four wheels is powered by its own electric motor. Weighing less than 500 pounds, the vehicle will be able to support a total weight of about 1,000 pounds, including two astronauts and their life-support equipment, and 200 pounds of tools, scientific experiments, and lunar soil and rock samples.

One unusual feature of the vehicle is a dead-reckoning navigation system, designed to operate without a magnetic compass, that will provide crewmen with exact information on heading, bearing and range back to the lunar module, total distance traveled, and velocity.

The LRV's turn radius is 122 inches (exactly its length), and it can cross crevasses 28 inches wide, climb and descend slopes as steep as 20 degrees, and negotiate step-like obstacles one foot high.

The LRV will travel more than 20 miles during its three traverses, but it will never be more than about three miles from the LM, thereby allowing crewmen to safely walk back to their landing craft in an emergency.

Apollo 15's LRV traverses are still being planned, so exact routes and scientific tasks along each route are not yet final. The first, and shortest, traverse will take place during a seven-hour extra-vehicular activity (EVA) to check the vehicle under operating conditions.

The second traverse, during another seven-hour EVA, is scheduled to explore along the edge of Hadley Rille, a half-mile-wide valley estimated to be 600 feet deep and 60 miles long.

The third traverse will probably travel along the north face of the Apennine Mountain range, thought to rise more than 8,000 feet above the Moon's floor. This traverse will be made during a third, six-hour EVA.

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The first traverse will cover a route of 2-2.5 miles in distance on a circular route from the landing site. The second and third traverses will each be about 9-10 miles in distance.

# # #

KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RELEASE NO: KSC-43-71
FOR RELEASE: March 11, 1971

KSC SUPPORT CONTRACT

The National Aeronautics and Space Administration has awarded a contract to The Boeing Co., Seattle, Wash., to provide installation and technical support services at the John F. Kennedy Space Center, Fla.

Value of the cost-plus-award-fee contract for an 11-month period beginning Mar. 1, 1971, is $18,704,300. The contract contains provisions for four one-year extensions.

The Boeing Co. will provide test support management, plant engineering and maintenance, logistics operations, security services, fire protection and prevention, documentation support, quality assurance and training.

The new contract is expected to achieve savings by combining work previously performed under three separate contracts. Seven firms submitted proposals for this work. Boeing was selected for final negotiations Nov. 23, 1970.

KSC conducts the launch of manned Apollo lunar expeditions from Launch Complex 39 at the Spaceport and unmanned launches from facilities at Cape Kennedy and the Western Test Range in California.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

MAR 16 1971

RELEASE NO: KSC-46-71
FOR RELEASE: March 15, 1971

APOLLO 15 LUNAR ROVER DELIVERED

KENNEDY SPACE CENTER, Fla.--The lunar roving vehicle (LRV) that will be used by the Apollo 15 astronauts on the moon this summer was delivered to the Kennedy Space Center today.

The LRV was taken to the high bay area of the Manned Spacecraft Operations Building at KSC following arrival at the Cape Kennedy Air Force Station skid strip at 8:20 a.m. EST. The vehicle was flown to the Cape by a chartered C-130 Hercules aircraft from the plant of the prime contractor, the Boeing Co., in Kent, Washington.

The battery powered lunar rover will be used by Astronauts David Scott and James Irwin to enlarge the scope of lunar exploration and increase astronaut mobility on the Apollo 15 mission. Three traverses are planned, with the first covering about 2 to 2.5 miles and the second and third about 9 to 10 miles each.

Following receiving inspection, the LRV will undergo fitness and compatibility checks, comprehensive combined systems verification and simulation testing before it is installed on the Apollo 15 lunar module in late April.

The Apollo 15 spacecraft components (command-service module and lunar module) also are being checked out in the high bay at this time.

The LRV was delivered following acceptance by NASA in special ceremonies at the Boeing plant on March 10. The Marshall Space Flight Center is responsible for managing LRV development, testing and manufacture.

The Apollo 15 mission is scheduled for launch on July 26.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MAR 24 1971

news release

#87

RELEASE NO: KSC-50-71
FOR RELEASE: March 24, 1971

SPACEPORT TEAM CHECKING OUT MOON ORBIT EXPERIMENT PACK

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center (KSC) team has started checking out a group of "Moon orbit" experiments to be activated for the first time during the Apollo 15 mission this summer.

Apollo 15 will lift off July 26 on man's most ambitious lunar exploration thus far. Astronauts for the flight are Commander David R. Scott, Command Module Pilot Alfred M. Worden and Lunar Module Pilot James B. Irwin.

At the Spaceport, the new lunar orbital experiments program is managed by the Apollo-Skylab Program Office, headed by Brig. Gen. Thomas W. Morgan. The experiments, mounted in the service module, are designed to provide a wide range of information about the Moon, the lunar environment, and space between Earth and Moon.

There are three groups of experiments involving photography, scientific measurements, and a subsatellite, which will be deployed in lunar orbit. The experiments will be activated while the service module is in lunar orbit.

The experiments will be fitted into a bay of the service module at KSC. Checkout and installation of this equipment package will be accomplished by Spacecraft Operations, directed by John J. Williams. Experiments integration and test activities are managed by Jackie Smith in the Engineering Division.

Coordinating program activities between KSC directorates concerned with the service module experiments, and the Manned Spacecraft Center in Houston is Arlin G. Smith. He supervises space vehicle activities for the Apollo-Skylab Program Office at KSC.

Before entering lunar orbit, a hatch covering the service module experiments bay is jettisoned. This insures that debris will stay out of lunar orbit and not affect instrument sensors. After Apollo 15 has entered its prescribed orbit of the Moon, the experiments will be activated.

-more-

"There are three photographic tasks," said Nelson R. (Bud) Wirman, Project Manager in the Apollo-Skylab Program Office for the Apollo lunar orbit science experiments.

A 24-inch panoramic camera will provide high-resolution photographs with steroscopic and monoscopic coverage of potential landing sites and exploration areas on the Moon.

A three-inch mapping camera will take pictures to pinpoint landmarks on the Moon and to support the preparation of lunar maps. It will also help to correlate photographs taken by the larger camera.

Film casettes from both cameras will be retrieved by one of the Apollo 15 crewmen. The astronaut will go outside the command module, make his way to the service module and return with the film casettes.

Attached to the mapping camera is a device called a laser altimeter. Its purpose is to chart the altitude of the spacecraft above the lunar surface to within one-meter resolution. This data will be used to support photographic tasks and to provide a profile of the lunar terrain.

The next group of four experiments involve scientific measurements, said Wirman.

Three of the experiment packages employ sensor devices called spectrometers to "take pictures" of otherwise invisible atomic particles and rays. By studying the resultant information, scientists can learn much about the makeup of the Moon and space.

A mass spectrometer will obtain data to tell scientists on Earth more about the composition of the Moon's atmosphere and about areas of former volcanic activity on the Moon.

An alpha-particle spectrometer will measure radiation from the Moon. A "radiation map" of the lunar surface will then be formulated.

The purpose of the gamma-ray spectrometer is to gather knowledge about the Moon's origin and evolution. The sensor device does this by determining the degree of chemical differentation the Moon has undergone during its development. It also determines the composition of the lunar surface.

-more-

The x-ray spectrometer assembly will measure the properties of fluorescent x-ray flux from the lunar surface and monitor the direct solar x-ray flux and the background galactic x-ray flux in order to obtain a gross analysis of the elemental composition of the lunar surface materials.

The third primary lunar orbit experiment is a subsatellite which will be deployed while the Apollo circles in lunar orbit. It will carry out three primary tasks over a planned one-year period.

Detectors in the subsatellite will obtain data to study the lunar gravitation field, plot the dynamics of the Earth's magnetosphere, the interaction of plasmas with the Moon, and the physics of solar flares, and obtain data on physical and electrical properties of the Moon.

The latter is expected to provide detailed data about the Moon's mascons, specific areas of high density or mass concentration within the lunar crust.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MAR 29 1971

news release

RELEASE NO: KSC-51-71
FOR RELEASE: FRIDAY A.M.
March 26, 1971

APOLLO 15 ASTRONAUT ALTITUDE RUNS PLANNED

KENNEDY SPACE CENTER, Fla.--Spacecraft manned altitude runs highlight the Apollo 15 work schedule for the next two weeks as operations continue to run smoothly aiming toward the July 26 launch date.

Director of Launch Operations Walter J. Kapryan said "preparations remain exactly on schedule" for the fifth planned manned lunar landing mission. The preliminary phase of launch vehicle checkout has been completed and preps for the command and lunar module altitude runs are in progress.

The Apollo 15 lunar module unmanned altitude run is scheduled for Friday, March 26 in vacuum chamber R in the high bay of the Manned Spacecraft Operations Building (MSOB). Apollo 15 prime crew members David Scott and James Irwin will board the LM on Monday, March 29 to check out the major spacecraft systems at altitudes above 200,000 feet. Backup Commander Richard Gordon and Lunar Module Pilot Harrison Schmitt will perform a similar run on Wednesday, March 31.

The command module unmanned altitude test is scheduled in chamber L on Tuesday, March 30, followed by manned altitude runs with the three prime crew members on April 6 and the backups on April 8. Command Module Pilot Alfred Worden and backup CMP Vance Brand will participate in these tests along with the other crew members.

During the manned altitude runs, the astronauts fly abbreviated flight plans with the spacecraft operating under some of the vacuum pressure conditions they would be exposed to during the mission.

The lunar roving vehicle (LRV), which will transport Scott and Irwin around the lunar landscape near their Hadley- Appenine region landing site, also is undergoing final preparations in the MSOB high bay. The flight crew and their backups will perform mission simulations with the vehicle during the second week in April before the Rover is installed aboard the lunar module about April 20.

The spacecraft components will be mated to the launch vehicle in High Bay #3 of the Vehicle Assembly Building about May 5. The Apollo 15 space vehicle will make the $3\frac{1}{2}$ mile trip from the VAB to the launch pad at Complex 39 on May 10.

-more-

Apollo 15 will be the longest mission and have the most comprehensive flight plan to date. Liftoff is scheduled for 9:34 a.m. EDT on July 26.

The lunar landing in the Hadley-Appenine region some 465 miles northeast of the center of the moon is scheduled to take place four days later on July 30. Scott and Irwin will spend some 67 hours on the lunar surface with three extra-vehicular excursions planned, averaging about 6 to 7 hours each, while Worden performs a variety of scientific experiments in lunar orbit. Mission duration is planned for 12 days, with splashdown in the Pacific occurring in the afternoon of August 7.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

MAR 1971

RELEASE NO: KSC-52-71
FOR RELEASE: FRIDAY P.M.
March 26, 1971

BROWN IN SKYLAB JOB

The National Aeronautics and Space Administration has named B. Porter Brown as Special Assistant for Missions, Skylab Program, Office of Manned Space Flight.

Brown will manage and coordinate Skylab manned Earth orbital space missions and associated activities.

Skylab is a three-man workshop to be placed in Earth orbit in early 1973. Experiments to be conducted aboard will increase man's knowledge of the Sun and its effects on man's Earthly environment; gather data to advance oceanography, water management, agriculture, forestry, geology, geography, air and water pollution, land use, and meteorology studies; and will strengthen the foundation for future manned systems and operations in the space environment.

Brown served as Director, Operations Support Requirements Office for NASA Manned Space Flight since Dec. 15, 1964. The primary function of his office was to coordinate program requirements with support organizations involved in manned space programs and to insure that such requirements would be satisfied.

Brown was born Feb. 5, 1925, in Hampton, VA. He received his B.S. degree in Aeronautical Engineering from Virginia Polytechnic Institute in Sept. 1945.

Following graduation, he joined the National Advisory Committee for Aeronautics at Langley Field, VA, where he was assigned to the Flight Research Division participating in research programs on military aircraft control systems and the X-1 Program at Edwards Air Force Base, CA.

In 1959, he joined the Space Task Group, later renamed the NASA Manned Spacecraft Center. He was immediately assigned to the Mercury Project Office at Patrick Air Force Base, FL, to coordinate launch activities on the Mercury Atlas Program and later the Gemini and Apollo Programs.

Brown and his wife, Mary, reside in Annapolis, MD.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MAR 29 1971

news release

RELEASE NO: KSC-53-71
FOR RELEASE: March 26, 1971

APOLLO 14 MOON ROCKS MOST COMPLICATED YET

A twenty-three man team of scientists has nearly completed preliminary examination of 94 pounds (42.64 kilograms) of lunar material from the Apollo 14 mission, including 63 pounds (28.5 kilograms) of rocks described as the most complicated yet returned from the moon.

Dr. Robin Brett, Chief of the Geochemistry Branch at NASA's Manned Spacecraft Center and Vice Chairman of the Lunar Sample Preliminary Examination Team, said the complexity of the rocks arises from the large number of minerals they contain, from their fragmental makeup, and from the numerous and often superimposed geologic histories they reflect.

The Apollo 14 rocks contain some 23 different minerals -- as many as were found in the Apollo 11 and 12 samples combined -- and only about half of these minerals have as yet been positively identified.

The individual rocks from the Apollo 14 sample are frequently composed of several different rock types; and they often contain large numbers of fragmental clusters or breccias which in turn are composed of smaller clusters which are themselves made up of still smaller fragmental clusters. Each of the superimposed groups of breccias may represent a different phase of the rock's history. Some of these gragments may date back to the original 4.6 billion year old crust of the moon.

Dr. Brett said it should not be surprising that the Apollo 14 material shows a complex and varied history. The site at Fra Mauro was selected, he said, because it offered an excellent chance to recover material that may have formed part of the ancient lunar crust and subsurface material before it was scattered over a large area of the moon's surface by the impact of the meteorite or asteroid which formed the Imbrium basin early in the moon's history.

Our experience with large meteorite impacts and volcanic explosions on earth, said Dr. Brett, would lead us to expect the kinds of complicated fragmental rocks we have in such abundance in the Apollo 14 sample.

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Although it is not possible from a preliminary examination to say conclusively that Imbrium crustal material was returned from the landing site at Fra Mauro, Dr. Brett said initial chemistry data shows the sample to be enriched in some of the same elements that formed earth's crust. They are elements, he said, which do not fit easily into most minerals, so if melting of a rock occurs these elements tend to separate out first, forming a scum which on earth cooled to form the planet's crust.

In comparing the Apollo 14 rocks with rocks returned from the Apollo 11 and Apollo 12 missions, the material from previous missions that is closest in chemical composition to many of the Apollo 14 rocks is the norite or "KREEP" component of rock 13 and others from the Apollo 12 sample.

The Apollo 14 rocks also possess low concentrations of solar wind implanted particles compared with similar rocks from the Apollo 11 and 12 sites. This implies either that the Apollo 14 fragmental rocks were formed in a different manner or that they had a different post-formational history from fragmental rocks returned previously from the mare regions of the moon.

The Apollo 14 sample contains far fewer igneous rocks than either the Apollo 11 or the Apollo 12 sample. Whereas large portions of the Apollo 11 and 12 rocks were igneous, only two of the rocks 50 grams (1.75 oz) or larger returned on the Apollo 14 mission are igneous, and only one of these is chemically similar to the basalts of either Apollo 11 or 12.

Nearly all the Apollo 14 rocks are composed of various sizes and types of fragments bound together with differing degrees of cohesion. At one extreme these fragmental rocks are little more than loosely cohering clods resembling clumps of dirt in a freshly plowed field or globs of wet beach sand. When placed in aluminum foil the crinkles of the foil will leave imprints on the rocks, and they must be handled with care to assure they do not disintegrate.

Other samples are much tougher and progress in uniform gradations to extremely tough fragmental rocks with physical properties resembling building stone or masonry.

The Apollo 14 rocks exhibit various degrees of crystallinity, with the tougher, more cohesive samples tending to be more crystalline. The tougher rocks also generally appear to be impregnated with a smaller quantity of particles associated with the solar wind such as carbon and rare gasses, with the lowest carbon content (28 parts per million) to be found in the largest rock -- a tough, 20 pound (9 kilogram) fragmental boulder, and the highest carbon content (225 parts per million) to be found in one of the crumbly, fine-grained rocks.

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The soil at the Apollo 14 site appears physically similar to the soil seen at the Apollo 11 and 12 locations, although there are some marked differences, particularly in chemistry.

The chemistry of the Apollo 14 soil closely resembles the chemistry of many of the rocks from that site. This contrasts with the Apollo 11 and 12 soils, which differed in chemistry from most of the rocks collected at these sites.

The extent and quantity of dust adhering to surfaces was less than on previous missions. The Modularized Equipment Transporter, for example, which was reported by the astronauts as occasionally "spraying" dust around, did not collect thick layers of dust.

A large solar flare, which occurred on January 25, just prior to the Apollo 14 mission, presented a unique opportunity to study solar flare products in the sample material and to determine the recent orientation on the lunar surface of the rocks. The orientation of one of the two igneous rocks has been determined using a radioactive isotope produced on the side of the rock facing the sun during the flare.

The Apollo 14 astronauts collected the lunar material at Fra Mauro on February 5 and 6, and the first shipment of Apollo 14 rocks and soil arrived at the Manned Spacecraft Center's Lunar Receiving Laboratory on February 11. The total return had arrived by February 17.

The Preliminary Examination Team has conducted its studies in the Lunar Receiving Laboratory, where the lunar material has been held in quarantine since its arrival in Houston. All samples were processed in pure nitrogen in glass and stainless steel glove cabinetry designed to protect the earth environment from the lunar material until it has been established that the sample contains no harmful organisms. At the same time the glass-walled cabinets protect the sample from being contaminated by earth's environment.

Results from the preliminary examination of the Apollo 14 sample will be used in dividing part of the sample for distribution to more than 175 scientific teams in the U. S. and in foreign nations shortly after quarantine release of the samples.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APR 5 1971

news release

RELEASE NO: KSC-54-71

FOR RELEASE: April 2, 1971
3:00 p.m.

CHRYSLER CONTRACT AT KSC EXTENDED THREE MONTHS

KENNEDY SPACE CENTER, Fla.--The National Aeronautics and Space Administration has extended a contract with the Chrysler Corporation Space Division, New Orleans, La., from April 1 through June 30, 1971 for work to be performed at the Kennedy Space Center.

This cost-plus-fixed-fee extension is valued at $1,296,903. Added to the previous contract amount of $10,874,411, the total now stands at $12,171,314.

This contract extension covers a follow-on effort to provide pre-launch, launch, post-launch and associated tasks and services in connection with the Saturn IB first stage, including operation and maintenance of assigned first stage launch support equipment necessary to support the Skylab Program Saturn IB launches from Launch Complex 39 at KSC.

This contract extension was negotiated with Chrysler on a selected source basis.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APR 8 1971

RELEASE NO: KSC-57-71
FOR RELEASE: April 6, 1971

EQUAL EMPLOYMENT OPPORTUNITY COUNSELORS NAMED AT SPACEPORT

KENNEDY SPACE CENTER, Fla.--A group of trained Equal Employment Opportunity (EEO) counselors have been designated at the Kennedy Space Center to maintain an open channel for hearing questions and grievances.

"When possible," said EEO Officer Nathaniel Pilate, "the counselors will provide a resolution of problems dealing with equal employment opportunity on an informal basis."

Pilate said the counselor's role must be fully understood and accepted by management, employees and the counselor himself.

"His neutrality must be maintained," Pilate added, "and there must be a systematic means of developing and strengthening the counselor's skill and knowledge."

He said the counselor function cuts down on the number of formal discrimination complaints, which are expensive due to the use of investigators, hearing officers and appeals examiners and general administrative costs.

"A second type of cost that must be assumed prohibitive," Pilate said, "is the demoralizing effect of a formal charge of discrimination on a supervisor or manager.

"Supervisors and managers are encouraged to establish and maintain an understanding and appreciation of the role of the EEO counselor and his efforts to resolve informally EEO problems.

"EEO counseling should improve the overall level of organizational morale and productivity."

The designated EEO counselors, who serve at large, are:

Eubanks Barnhill, James A. DeVault, William H. Deloach, Harold A. Simms, James A. Smith, William B. Trammell, John W. Mace, Beverly Merrilees, Ernest P. Swieda and Patricia Lowry.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APR 8 1971

RELEASE NO: KSC-58-71
FOR RELEASE: April 6, 1971

GSA CARS AT SPACEPORT USING NO-LEAD GAS TO FIGHT POLLUTION

KENNEDY SPACE CENTER, Fla.--George Grove, Chief of GSA Operations at the Kennedy Space Center (KSC) said that all GSA vehicles here began burning no-lead gasoline April 1 to aid in the battle against air pollution.

Grove also said this action was designed to stimulate production of these fuels by providing more markets.

More than one million gallons of the no-lead gasoline will be purchased for GSA vehicles at KSC this year, he said.

The octane of the gasoline, he added, is actually higher than the previous leaded gasoline and that no engine problems, such as knocking and valve pings, are expected.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

APR 8 1971

RELEASE NO: KSC-59-71
FOR RELEASE: April 7, 1971

KSC'S UNMANNED LAUNCH OPERATIONS HAS DOUBLE RESPONSIBILITY FOR MARINERS

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center's Unmanned Launch Operations, directed by John J. Neilon, has a double responsibility for the Mariner Mars '71 missions. It will have to launch two Atlas-Centaur (AC) vehicles within a 10-day period, on May 6 and 16.

The two Mariner Mars spacecraft, developed by the Jet Propulsion Laboratory in California, are undergoing final preparations at Cape Kennedy before mating with the launch vehicles.

The preparations for these launches are somewhat similar to getting ready for the Mariner '69 missions, Mariner 6 going on February 24 and Mariner 7 on March 27.

However, for this tighter launch frame, the logistics involved in getting both vehicles ready and scheduling of key launch personnel is much more difficult. All of the hardware is fit-checked to assure that it will fit either vehicle and a pool of spares is established that can be used on either.

Efficiency of operations is not lost as the key personnel move from one vehicle to the other as required, and a small crew stays with the vehicle not undergoing testing in order to monitor its major systems and maintain quality surveillance.

In providing launch operations, ULO handles scheduling of test milestones and review of data to assure that the launch vehicle has met all of its test requirements and is ready for launch.

In working these two vehicles on the close launch schedule, ULO basically allows sufficient time to check out both of them, AC-23 was erected in December on Pad B at Launch Complex 36 and AC-24 was placed on Pad A in February.

The Terminal Countdown Demonstration (TCD) was conducted about seven weeks prior to launch using an encapsulated prototype model of the Mariner Mars spacecraft.

The TCD primarily demonstrates that all of the functions leading to the actual countdown can be performed. It is an end-to-end check of all systems and includes propellant loading of both launch vehicle stages to assure the tanks and facilities are ready for the countdown.

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The Joint Flight Acceptance Composite Test (J-FACT) was run about six weeks before launch to assure that the vehicle was electrically ready for final launch preparations and that the proper connections were made with the spacecraft.

The J-FACT includes running the computer and programmer through post flight events and monitoring the data to assure correct response to all signals with umbilicals ejected.

After AC-24 was erected and the basic systems were checked out, the prototype model was transferred over from AC-23. The TCD on this vehicle was conducted about six weeks prior to launch, followed by the J-FACT a week later.

In late April, the Mariner H spacecraft will be mated on AC-24 and an electrical and mechanical test will be run prior to a second J-FACT. Mariner I will be encapsulated but not mated to AC-23 until Mariner H is launched.

At this point, it will be possible to launch either space vehicle on either of the two missions. In this case, however, AC-24 is expected to be selected for the first mission and an electrical-mechanical test and a second J-FACT is scheduled in early May for AC-23 as an added assurance for a successful flight.

The Countdown Readiness Test is scheduled for both space vehicles about four days before launch. It verifies the ability of the launch vehicle to go through post-flight events and revalidates the umbilical system.

The range support elements participate along with the spacecraft and launch vehicle just as during a launch.

The F-1 Day Functional Test involves final preparations in getting the entire space vehicle ready for launch, preparing ground support equipment, completing readiness procedures and installing ordnance on the launch vehicle.

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KSC news release
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APR 8 1971

RELEASE NO: KSC-60-71
FOR RELEASE: April 7, 1971

KSC EMPLOYEE PLAYS TOP-NOTCH BRIDGE

KENNEDY SPACE CENTER, Fla.--Armond N. Barfus, Deputy Chief of the Analytical Laboratories Division of Support Operations, Kennedy Space Center was a member of the Florida bridge team that won third place in the Vanderbilt Team Event, one of three tournaments that lead to the North American Championship.

Barfus and the other team members, Robert Rothlein and Al Bricklin of Orlando and Richard Pavlicek of Fort Lauderdale, were first defeated by the World Bridge Championship Team, the U.S. Aces from Dallas.

During tournament play they defeated three teams captained by Oswald Jacobi, Sam Stayman and George Rapee.

He said if the Florida team plays well in the upcoming Spingold Event this summer in Chicago, it will amass enough trial points to compete for the North American championship.

The winner of this event then competes with the South American, European and Far Eastern champions in the Annual International Event for the World Championship.

At work, Barfus is associated with the division which operates various physical, chemical and mechanical laboratories in support of the Center and the Eastern Test Range.

Some of the functions performed by these laboratories include cleaning and functional testing of ground support equipment components and systems, purity sampling and analysis, malfunction investigation and materials testing.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-62-71
FOR RELEASE: April 14, 1971

NASA TO PROBE ALL PLANETS THIS DECADE, SAYS KSC OFFICIAL

KENNEDY SPACE CENTER, Fla.-- The Director of Unmanned Launch Operations (ULO) at the Kennedy Space Center said Tuesday night that by the end of this decade NASA will have launched spacecraft toward all of the nine planets of the solar system.

ULO Director, John J. Neilon told an Air Force Association meeting at Patrick Air Force Base: "We will have landed unmanned spacecraft on Mars, and we will have sent spacecraft out of the solar system into the galactic regions surrounding it.

"I believe the planetary exploration program is the most exciting facet in unmanned operations.

"One of man's greatest quests has been the attempt to learn more about the universe and all that is in it: Where did life come from? How did it all begin?

"We don't expect to have all the answers immediately, but this looks like the best opportunity to begin to answer some of them."

Neilon said two Atlas/Centaur vehicles are on launch pads at Complex 36 now that will begin this decade's planetary exploration with launches 10 days apart in May of two Mariner spacecraft to Mars.

The Mariner Mars '71 project is a follow-on to the 1964 and 1969 exploratory fly-by missions. However, the '71 spacecraft will go into orbit about Mars, with a closest approach of 1,000 miles.

They will study the dynamic characteristics of the planet for a minimum period of 90 days and obtain data on the atmospheric composition, density, pressure and temperature as well as composition, temperature and topography of the surface.

He said onboard experiments "should give us indirect evidence of the suitability of Mars as a habitat for life.

"One thing Mariner Mars '71 will not tell us is whether or not life in any form exists on Mars. Detecting life on Mars would be on one of the most significant scientific finds of the century."

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In 1975, KSC will launch two Viking spacecraft toward Mars. Each spacecraft will consist of two parts, an orbiter and a lander.

The Viking will go into orbit about the planet and select a suitable landing site. The lander will then separate from the orbiter and, using a combination of a parachute and controlled throttle descent engines, make a soft landing on the surface.

"Since a primary purpose of the landing is to search for evidence of life on Mars," Neilon said, "it is imperative that we do not contaminate the surface of the planet with organisms from Earth."

He said the next step after Viking will probably be an automated rover that will traverse the surface of Mars, performing analysis at various points.

"Automated return of samples from Mars to Earth will very likely be next in the exploration of the Red Planet," he said. "We hope to land man on Mars, but that will be several years in the future."

Neilon said as part of the program this decade, KSC will launch a triple "first" mission in 1973. Mariner J will fly by Venus and, using the "gravity assist" or "pop-the-whip" method, swing by it with increased speed on toward Mercury.

"This mission," he said, "will give us our first television picture of Venus, use gravity assist for the first time, and be the first spacecraft to venture to Mercury.

"In addition to television, the spacecraft will carry instruments to study the magnetic fields, thermal characteristics and atmospheres of the two planets."

The next launch to the inner solar system will be a cooperative effort with West Germany in July of 1974. Helios will investigate the properties and processes in the interplanetary space near the Sun.

Its closest approach to the Sun will be approximately 28 million miles, bringing it about nine million miles inside the orbit of Mercury.

"Our investigation of the outer solar system will really get underway with Pioneer, which will venture beyond Mars in 1972 and 1973," Neilon said.

"This will be our first attempt to penetrate the 150 million mile wide asteroid belt. This belt, containing thousands of minor planets or planetoids and millions of smaller objects, lies between the orbits of Mars and Jupiter.

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"We think we can fly through it, but we aren't sure. Pioneer F and G should supply the answer."

As the Pioneer spacecraft approach Jupiter, television cameras will send back the first pictures of that planet. Other instruments will study Jupiter's atmosphere.

Pioneer F will fly under Jupiter, and use its gravity to swing the spacecraft 30 degrees out of the ecliptic for a look at galactic space.

Jupiter is the giant of the solar system. With a diameter of 86,900 miles, it is large enough to swallow 1,300 Earths.

Because of its massive size, Jupiter has a tremendous gravitational force that will be utilized by NASA to help in the exploration of the outer planets, Saturn, Uranus, Neptune and tiny, far away Pluto.

In the late 70's, he said, the outer planets will be in an alignment that occurs only once in 179 years. If a spacecraft is launched to pass behind Jupiter, the gravity of that planet and its 25,000 miles velocity about the Sun will give the spacecraft a "crack-the-whip" acceleration, speeding it on its way to the other planets.

Two different "Grand Tours" utilizing thermoelectric outer planet spacecraft (TOPS) are planned to take advantage of this opportunity.

The J-S-P missions will swing by Jupiter toward Saturn, and utilizing the same gravity assist method at Saturn, speed on outward to Pluto. Estimated flight time to Pluto is eight and one half years.

The J-U-N missions will visit Jupiter, Uranus and Neptune with a flight duration of nine years.

The spacecraft, after flying past the last planet on their itinerary, will move out of the solar system and continue on to explore areas of the Milky Way galaxy.

"When the spacecraft approaches Pluto or Neptune, they will be more than three billion miles from Earth," Neilon said. "We hope to maintain communications with the spacecraft out to a distance of over nine billion miles."

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-84-71
FOR RELEASE: April 21, 1971

KSC ENGINEER PRESENTS LAUNCH SYSTEM TO CUT OPERATING EXPENSES

KENNEDY SPACE CENTER, Fla.--Walter E. Parsons, Chief of the Systems Engineering Division of Design Engineering at the Kennedy Space Center (KSC), presented to the 8th Space Congress a unified Launch Processing System designed to cut operations costs of future space vehicles.

In a technical paper prepared for the Cocoa Beach meeting, Parsons said it is apparent that significant costs savings will accrue within a single program by combining the essential support functions at the launch site.

He said these functions included power, propellant loading, environmental control, communications, instrumentation, facilities, monitor and control, automated testing sequences, safety, tracking, recovery and fluids and gases.

"Additional cost savings can be realized," he added, "by providing common e lements of support to multiple programs on an institutional basis, and through applying the concepts of modularity, commonality and reuseability.

"This encompasses a broad spectrum of mechanical and electrical systems and support services."

Parsons said a Launch Processing System is being configured to provide support at KSC for both manned and unmanned programs.

For the Shuttle Program, he said the system support will start during final assembly and continue through post-flight data and vehicle turn-around activities.

"The largest single element of support identifiable at this time will be in support of maintenance and logistics," he said. "Consistent with the stated system philosophy, the maintenance process will employ considerable automation to reduce costs through improved efficiency."

Parsons said the major support system elements or sybsystems can be divided into the following generalized areas:

--Man-machine interface for monitoring and command.
--Monitoring and command data busses.
--Vehicle interface equipme nt.
--Ground servicing interfacing equipment.
--Central data processing area.
--Automated bench maintenance equipment.

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"These subsystems will be arranged in a fail safe network to meet the stringent operational reliability requirements imposed on the launch center," he said.

"The system elements will be distributed throughout the geographical area and will be co-located with other support equipments within the various user environments."

During limited test activities, Parsons said, subsystems elements may be used in a stand-alone mode to simplify activities.

In the event of a major system failure, he added, subsystem elements may be used in the stand-alone mode to perform critical functions to avoid unsafe conditions. As conditions return to normal, the higher level system will again assume control of the subordinate systems, returning the monitor and control capability to its position.

Parsons said the Launch Processing System concept for multi-mission support during this decade offers significant cost savings to NASA through:

--Reduced inventory of hardware, software and support services without compromise of technical or operational flexibility.

--Simplified interfaces between the ground equipment and the vehicle, between the ground equipment and man, and between tests personnel and support services.

--Increased efficiency and effectivity of the ground support personnel through commonality of equipments and procedures during ground testing, a more reasonable balance of work load between man and the machine, improved human comprehension through more meaningful real-time data processing and displays, real-time access to historical and related data, selectable automation with manual intervention and simplified software systems.

--Improved management visibility into elements of cost, scheduling, and their interdependency.

--Utilization of the more cost effective elements of hardware and software within the existing inventory.

Also, he said that design of the on-board Shuttle systems for maintainability and simplified checkout and the attitude of management relative to dependence on redundant systems at liftoff will have significant impacts on launch site costs.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-85-71
FOR RELEASE: April 21, 1971

ASTRONAUTS, LAUNCH TEAM CONTINUE BUSY SCHEDULE ON APOLLO 15 TESTING

KENNEDY SPACE CENTER, Fla.--The Apollo 15 astronauts and the government-industry launch team continued their busy schedule at the Kennedy Space Center (KSC) this week, testing the various spacecraft components in the high bay of the Manned Spacecraft Operations Building.

Backup Command Module Pilot Vance Brand and Carl Henize, a member of the astronaut support team, completed a four hour verification test of the command module at altitude in the vacuum chamber on Tuesday.

The present schedule calls for the spacecraft to be moved to the Vehicle Assembly Building (VAB) for mate with the launch vehicle on May 8 and rollout on May 11. Apollo 15 is scheduled for launch on July 26.

Apollo 15 Commander David Scott and Lunar Module Pilot James Irwin planned to perform mission simulations aboard their lunar roving vehicle (LRV) yesterday. They will rehearse actual deployment of the Rover from a bay of the lunar module this weekend. Scott and Irwin will ride the LRV on the lunar surface for the first time to extend their scope of operations.

Checkout of the Apollo 15 launch vehicle continues to run satisfactorily in the VAB. The extensive malfunction overrall test was completed last week and launch crews are preparing for next Tuesday's verification test of the vehicle swing arms.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-86-71
FOR RELEASE: April 21, 1971

YOUTH SCIENCE CONGRESS UNDERWAY AT SPACEPORT

KENNEDY SPACE CENTER, Fla.--The National Aeronautics and Space Administration and the National Science Teachers Association (NSTA) are sponsoring a Regional Youth Science Congress at the Kennedy Space Center (KSC) April 21-23.

Twenty high school science students from Florida and Georgia are taking part in a program of seminars and discussions with scientists and engineers here and presenting scientific papers.

Walter Kapryan, Director of Launch Operations at KSC, will give the keynote address at the Youth Congress Wednesday evening.

Dr. John W. Shrum, Chairman Science Department, University of Georgia, will outline the purpose of the Youth Congress and the role of NSTA.

Friday morning, Ralph A. Yorio, Chief of the Malfunction Analysis Branch at KSC, will give a special briefing concerning the malfunction laboratory and the scanning electron microscope.

The regional chairmen for the Congress are William Nixon, Chief, Educational Programs, Public Affairs Office, KSC, and for NSTA, Kenneth Marx, Physics Department, Merritt Island High School.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-88-71
FOR RELEASE: April 22, 1971

CONGRESS ON AEROSPACE EDUCATION PLANS DAY OF ACTIVITY AT SPACEPORT

KENNEDY SPACE CENTER, Fla.--The National Congress on Aerospace Education, meeting in Daytona Beach April 28-May 1, will come to the Kennedy Space Center on April 29 for a full day of activities.

Miles Ross, KSC Deputy Director, will give the welcoming address, followed by a presentation on NASA Educational Programs and Services by Dr. Frederick B. Tuttle, Director of Educational Programs Division, NASA Headquarters, and William D. Nixon, Chief of the Educational Programs Branch, KSC.

Robert C. Hock, Deputy Manager of Apollo-Skylab Programs at KSC, will then brief the delegates on the Skylab Program. Sam T. Beddingfield, Space Shuttle Task Group Manager at KSC, will give a presentation on the Shuttle Program.

After lunch, the group of about 300 will tour KSC facilities.

At 1:30 p.m. April 30, Apollo 16 Commander John Young will give the keynote address at the Congress.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-89-71
FOR RELEASE: April 22, 1971

NASA, AIR FORCE COMPLETE AGREEMENT FOR NASA/KSC USE OF TITAN FACILITIES

KENNEDY SPACE CENTER, Fla.--NASA and the Air Force (AF) have completed a series of complex agreements involving several major contractors that clears the paper work to begin activation of Titan checkout and launch facilities in July for use by the Space Agency.

Actual work will begin as funds are authorized by Congress.

In the mid-70's, NASA plans to use a Titan III-D/Centaur configuration at Launch Complex 41, Cape Kennedy, to launch two Viking spacecraft to Mars and two Helios scientific satellites in the vicinity of the Sun.

A two-launch HEAO program has been proposed using the Titan III-D, but it is not totally funded at this time.

These missions will be preceded by an "all up" proof flight scheduled for early 1974. All modifications at the Integrate-Transfer-Launch (ITL) Complex on the Cape Kennedy Air Force Station are presently scheduled against this proof flight as the principle milestone.

Also, the AF will launch two Titan III-C's for NASA to place Applications Technology Satellites (ATS) in Earth syncronous orbit.

The Office of Space Science and Applications, NASA Headquarters, will have overall responsibility for the Space Agency in the joint agreement, and it will interface with the AF Research and Development Division.

The Lewis Research Center has an agreement with the AF Space and Missile Systems Organization (SAMSO) for the Titan launches. In turn, Lewis will be coordinating NASA activities directly with KSC, which is represented by the Unmanned Launch Operations (ULO) Directorate.

The Lewis Centaur Project Office will have a working relationship with the AF Titan III Systems Project Office, and ULO will coordinate launch activities with the AF 6555 Aerospace Test Group, which acts on a consultative basis and as overall manager of the ITL Complex.

The facilities at Launch Complex 40 are configured to handle the Titan III-C, so it is more economical for the AF Systems Project Office and the 6555 Aerospace Test Group to launch the ATS projects for NASA.

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However, the new Titan-Centaur will require extensive changes in ground support equipment, instrumentation and work platforms around the vehicle, so NASA will come in on the ground floor and follow through with the planned missions.

Under the Lewis Project Office-AF Systems Project Office agreement, the architectural and engineering contract will be managed by the Corps of Engineers.

The Martin Marietta Corporation, which builds the Titan, will be a prime contractor for NASA and AF operations regarding the booster portion and ITL Complex. Martin services will be supplied to NASA under existing AF contracts.

The General Dynamics Corporation (GDC), Convair, which manufactures the Centaur stage, will operate only under a NASA requirement, reporting to the Lewis Project Office, which in turn coordinates activities with ULO.

Martin Marietta is the vehicle integration and booster contractor, and GDC is the mission and Centaur contractor.

Basically, Martin is responsible for the design of the new facilities and handles the joint operations procedures, while GDC is responsible for spacecraft and Centaur integration, certain interfaces between Centaur, Titan and facilities, and mission constraints and requirements.

John Gossett, Chief of the Centaur Operations Branch, ULO, said a very careful assessment was made of existing available equipment at Launch Complexes 34 and 37, which have been phased out, and a tremendous amount will be transferred to the Titan complex to cut costs.

This equipment includes cryogenic systems, environmental control systems, theodolites, and power substations.

In addition, Gossett said, "the intent now is to use NASA's Complex 36 on Cape Kennedy as an operations area and to utilize its ground guidance computer for the Titan-Centaur launches. This saves another computer complex."

He said a deck platform would have to be cut out in Cell No. 1 in the VIB to accommodate the Centaur stage, and that liquid hydrogen, liquid oxygen, helium and gaseous nitrogen storage and handling facilities would have to be added.

Also, the entire Centaur stage and spacecraft will be enclosed by a new shroud, and this will require additional booms and other platform cut-outs.

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Due to the different requirements for the Titan-Centaur and Titan III-C configurations, it would be impossible to assemble and checkout the new version in an existing cell in the Verticle Integration Building (VIB).

However, the capability will exist to convert the cell in the VIB back to the Titan III-C configuration within 30 days if required.

The two Titan vehicle configurations will share equipment in the Instrumentation Room in the VIB. This room is a collection center for data readouts coming from the vital sensor points on the vehicle and GSE.

Also, they will share the area and the AF launch contractor in the ITL Complex on a reimbursable basis.

Space will be allotted inside the VIB for NASA and contractor personnel working on the spacecraft and Centaur stage.

NASA also will reserve Launch Control Center (LCC) No. 1 in the VIB for the Titan-Centaur.

The Solid Motor Assembly Building (SMAB) will be the only location that is totally common to both the Titan-Centaur and Titan III-C. Each vehicle will require about one week in the SMAB.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-90-71
FOR RELEASE: April 22, 1971

CAUTION ON FIRES URGED AS DRY WEATHER POSES THREAT TO PROPERTY, ANIMALS AT KSC

KENNEDY SPACE CENTER, Fla.--An unusual lack of winter rainfall, the coming dry season, human carelessness and arson are posing a real fire threat to property and operations at the Kennedy Space Center and to the habitat of thousands of wild animals in the Merritt Island National Wildlife Refuge.

Norris C. Gray, Chief of KSC Fire and Rescue, said several areas have been burned off and the dry weather and rising temperatures now make fire a daily threat. He urged people using KSC property for recreational purposes to be extremely careful with matches or fire of any nature.

Don Phillips, Chief Test Supervisor, said that an interruption of power due to brush fires can cause a major Apollo/Saturn V space vehicle test to be scrubbed. The Apollo 15 vehicle is scheduled to roll out to Pad A on May 11.

Hal O'Connor, Manager of the wildlife refuge, said a recent fire in the Haulover Canal Area destroyed the habitat of nine Southern Bald Eagles.

O'Conner said he believes a number of the fires are being deliberately started. He warned that persons who start fires at KSC are subject to prosecution for violation of Federal laws.

"Practically all of the fires at KSC are started by people," said Gray, "either through carelessness or by design. The major cause is carelessly discarded cigarettes and matches. Cigarettes should never be dropped from cars.

"Burning of rubbish, malfunctions in electrical equipment, automobiles and camp fires also are sources of fires. Occassionally fires are started by natural causes such as lightning."

Gray said if a person spots a fire, or sees someone starting one he should immediately notify the KSC Fire Department by dialing 117 or notify Security by calling 867-2121.

"Too often people make a mistake when they attempt to extinguish the fire rather than report it," Gray said. "The first action should be to report the fire."

-more-

Contrary to what many think, he said, brush and woods burn very readily even when green. In the dry season, such fires spread rapidly.

Also, automobile accidents increase during periods of brush fires when smoke obscures the roads and pollutes the air.

Brush fires on the Center are controlled by the KSC Fire Department, which may call on heavy equipment shops to assist with bulldozers and water tankers.

If the fires endanger lines or property, the efforts are coordinated with the Forestry Service, Florida Power and Light, wildlife refuge personnel and Security.

Gray said a program of mutual assistance also can be utilized in the dispatching of fire apparatus from neighboring communities if required.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-91-71
FOR RELEASE: April 22, 1971

KSC SELECTED TO HOST TENTH ANNIVERSARY CELEBRATION OF FIRST U.S. MANNED SPACE FLIGHT

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center has been selected by the National Aeronautics and Space Administration to host the 10th Anniversary celebration of the first U. S. manned space flight.

At 9:34 a.m. on May 5, 1961, Alan Shepard, one of the "Original 7" astronauts selected by the Space Agency, lifted off from Complex 5-6 on Cape Kennedy in the Freedom 7 capsule atop the Redstone launch vehicle.

Some five minutes prior to 9:34 a.m. on this May 5, the tape of the Mercury-Redstone space vehicle countdown will be played back to bring back memories of that historic occasion.

The Complex 5-6 blockhouse has been restored to its original configuration and a Mercury-Redstone vehicle is erected at the pad.

Shepard, members of his family, NASA officials, Congressmen, members of the NASA-contractor launch team at that time and hundreds of other personnel have been invited to attend the ceremony.

Top KSC officials who played vital roles in Shepard's first launch and who are expected to be on hand include:

--Dr. Kurt H. Debus, Center Director who served as Director, Launch Operations Directorate, Marshall Space Center.

--Walter J. Kapryan, KSC Director of Launch Operations, who was Capsule Project Engineer, Engineering Division, Space Task Group, Langley Field, Virginia.

--G. Merritt Preston, Director of Center Planning and Future Programs, who held the title of Chief of Preflight Operations Division, Manned Spaceflight Center.

--Paul C. Donnelly, Associate Director for Operations and Chief of the Test Operations Office, Launch Operations, who served as Capsule Test Conductor for the Space Task Group.

--Robert E. Moser, Chief of the Test Planning Office, Launch Operations, who was Vehicle Test Conductor.

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PUBLIC INFORMATION OFFICE, AREA CODE 305-867-2468

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-92-71
FOR RELEASE: FRIDAY A. M.
April 23, 1971

APOLLO 15 TIMELINE

The planned launching in July of the Apollo 15 lunar mission opens the final, three-flight series of manned lunar exploration missions.

The Apollo space vehicle for these missions will be capable of delivering to the lunar surface twice as much equipment and scientific payload as any previous vehicle. This payload will include additional life support consummables to double the time the astronauts can work on the lunar surface.

Exploration periods on the Moon will be increased to three with two of these periods lasting up to seven hours and one up to six hours. A lunar roving vehicle will provide transportation for the astronauts, experiments, tools, new communications equipment, and lunar samples collected during the three traverses.

The lunar roving vehicle and improved astronaut space suit and life support systems will increase the range and efficiency of these surface operations.

The service module of the Apollo spacecraft has been modified to include a scientific instrument module which houses experiments to be conducted from the lunar orbiting Apollo spacecraft.

On the Apollo 15 and 16 missions, a subsatellite will be ejected into lunar orbit from the spacecraft scientific instrument module. The satellite includes three experiments that will continue to operate in lunar orbit for about a year.

A television camera mounted on the lunar roving vehicle will provide coverage of astronaut surface exploration events while the vehicle is not actually in motion. The television system includes a ground command capability which could permit the first television coverage of lunar module liftoff from the lunar surface.

For the first time on an Apollo return flight from the Moon, the spacecraft command module pilot will leave the cabin, move along the outside of the spacecraft to retrieve films from the scientific instrument module, for return to Earth. Television coverage of this activity is being planned.

This series of three Apollo missions will complete the manned lunar exploration program. Apollo 15 is scheduled for launching July 26 at 9:34 a.m. EDT from the Kennedy Space Center, Fla.

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Apollo 15 will be commanded by David R. Scott, a USAF colonel; with Alfred M. Worden, a USAF major, as command module pilot; and James B. Irwin, a USAF lieutenant colonel, as lunar module pilot.

The landing site for the 12-day mission is the Hadley- Apennine area of the Moon between the Apennine Mountains to the east which peak to 13,000 feet above the landing site and the meandering Hadley Rille, about a mile wide and 1,200 feet deep.

A tentative timeline of Apollo 15 mission events follows.

Event	Time from Liftoff (Hr/Min)	EDT/Date
Launch		9:34 am July 26
Earth Orbit Insertion	00:12	9:46 am
Trans Lunar Injection	2:50	12:24 pm
Lunar Orbit Insertion	78:31	4:05 pm July 29
Descent Orbit Insertion	82:40	8:14 pm
Spacecraft Separation	100:14	1:48 pm July 30
Lunar Landing	104:42	6:15 pm
Lunar Exploration I	119:50	9:24 am July 31
Lunar Exploration 2	141:10	6:44 am Aug. 1
Lunar Exploration 3	161:50	3:24 am Aug. 2
Lunar Liftoff	171:38	1:12 pm
Spacecraft Docking	173:30	3:04 pm
Trans Earth Injection	223:44	5:18 pm Aug. 4
Trans Earth EVA	242:00	11:34 am Aug. 5
Pacific Ocean Splashdown (26° N. Lat./158° Long.)	295:12	4:46 pm Aug. 7

# # #

KSC

KENNEDY SPACE CENTER, FLORIDA

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-95-71

FOR RELEASE: April 28, 1971

AIR FORCE REASSIGNS BRIG. GEN. MORGAN AFTER TENURE AT KENNEDY SPACE CENTER

KENNEDY SPACE CENTER, Fla.--The U. S. Air Force has announced the reassignment of Brigadier General Thomas W. Morgan, who managed the Apollo and Skylab Programs at this Center, to the Air Force Space and Missile Systems Organization, Los Angeles, Calif. where he will become Vice Commander.

General Morgan's tour at KSC included the peak phase of the manned lunar exploration program which culminated in the successful missions of Apollos 11, 12 and 14.

He also managed KSC preparations for the Skylab orbital workshop to be launched in 1973 and visited by three astronaut crews during that year.

General Morgan was director of operations for the Air Force manned orbiting laboratory program before joining the KSC organization. He also served as chief of the Thor Launch Division, 6555th Aerospace Test Wing at Patrick Air Force Base, and later became Vice Commander of the Wing. He joined KSC October 9, 1967.

He is a native of Alabama and graduated from Auburn University with a B.S. degree in aeronautical engineering. He was commissioned in the U.S. Army Air Corps at Yale University in July, 1943. He attended the graduate program in guided missiles at the University of Michigan for two years and the Air War College at Maxwell A.F.B., Ala.

General and Mrs. Morgan have seven children. They live at Patrick Air Force Base.

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KSC
KENNEDY SPACE CENTER, FLORIDA
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-96-71
FOR RELEASE: April 28, 1971

APOLLO QUARANTINE DISCONTINUED

On the basis of tests of lunar rocks and soil brought to Earth by three U. S. manned Moon landing missions, the National Aeronautics and Space Administration has decided to discontinue quarantine of the returned astronauts, spacecraft and lunar materials for the remaining three Apollo flights.

Dr. George M. Low, NASA Acting Administrator, stated: "The analysis of quarantine information from Apollo 14 has now been completed. On the basis of this analysis, as well as the results from the Apollo 11 and Apollo 12 flights, we have concluded that there is no hazard to man, animal, or plants in the lunar material.

"These results have been reviewed by the Interagency Committee on Back Contamination, and that committee has recommended that further lunar missions need not be subject to quarantine."

The committee was established in 1966 to assist NASA in developing a program to prevent possible contamination of the Earth by lunar materials. The committee membership includes representatives of the Public Health Service of the Department of Health, Education and Welfare; the Department of Agriculture; the Department of the Interior; NASA and the National Academy of Sciences.

The crews of Apollos 11, 12 and 14 were transported from the recovery ship in a sealed Mobile Quarantine Facility and kept in quarantine with the spacecraft, lunar-exposed material and lunar samples in the Lunar Receiving Laboratory at the Manned Spacecraft Center, Houston, for a period of 21 days from the last closing of the hatch of the Lunar Module on the lunar surface. During this period intensive analyses of the lunar material were performed, to determine if there were any harmful effects on the life on Earth; none were found.

There was no quarantine for Apollo 13, since the flight was terminated without landing on the Moon.

Discontinuing the quarantine will not significantly affect procedures for protecting the Apollo 15, 16 and 17 lunar samples from contamination on the return journey and during transport to the Lunar Receiving Laboratory. Accountability and allocation procedures similar to those used in the past also will continue to be employed.

Apollo 15 is scheduled for launch next July and Apollos 16 and 17 are in 1972.

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KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

MAY 10 1971

RELEASE NO: KSC-100-71
FOR RELEASE: May 6, 1971

KSC YOUTH SEMINAR

KENNEDY SPACE CENTER, Fla.--The National Aeronautics and Space Administration will host a Space Seminar June 14-18, 1971 at this Center for 60 youths representing the 50 States and several foreign nations, under sponsorship of the Hugh O'Brian Youth Foundation.

Participants for the Seminar were selected by the National Association of Secondary Principals through the National Association of Student Councils.

Students were chosen on the basis of their personal interest in the space program and their school, religious and community service records. The competition was open to high school students who will complete their sophomore year this Spring.

During their stay at the Kennedy Space Center, the students will have opportunity to enhance understanding of the nation's space exploration program, visit NASA and Cape Kennedy Air Force Station facilities, and discuss space launch operations with scientists and engineers. They will be housed at Patrick Air Force Base.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO:

FOR RELEASE: May 6, 1971

NOTE TO NEWS MEDIA:

The Apollo 15 launch vehicle and spacecraft rollout from the Vehicle Assembly Building to Launch Complex 39A is scheduled to begin at 6:30 a.m. EDT, Tuesday, May 11 at Kennedy Space Center. The prime crewmen Dave Scott, Al Worden and Jim Irwin will be present until about 8:00 a.m. for the rollout. Beginning at 8:30 a.m. EDT outside the Crew Training Building at KSC, the Apollo 15 Commander Dave Scott and Lunar Module Pilot Jim Irwin will conduct an Extravehicular Activity No. 1 simulation. The exercise will be open for news media observation and photography on a non interference basis. The crewmen will be suited and during the exercise will utilize the Lunar Roving Vehicle 1-G trainer, do an Apollo Lunar Experiment Package (ALSEP) deployment, an exercise with the Lunar Drill, do documented sample collection and other exercises slated for the first EVA. The EVA training exercise will last approximately four hours, beginning with offloading the equipment from the Lunar Module bays onto the LRV 1-G trainer. From there they will move outside to complete the EVA exercise.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

MAY 10 1971

RELEASE NO: KSC-101-71
FOR RELEASE: May 7, 1971

KSC TOPS ALL NASA CENTERS IN AEROSPACE SAFETY CONTEST

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center has placed first among National Aeronautics and Space Administration Centers in the National Safety Council's Aerospace Section 1970 Contest and third in the Research and Development category.

In a letter to KSC Director Dr. Kurt H. Debus, NASA Associate Administrator for Manned Space Flight Dale D. Myers said the Spaceport "had only one chargeable injury among its 2,700 plus Civil Service employees for the entire year -- a remarkably good experience."

Myers said the KSC accident frequency rate of 0.17 lost time injuries per million man-hours worked compares very favorably with the 1.53 rate for all 93 contestants in the Aerospace Section.

"It is a continuation of the very low frequency rates achieved in 1968 and 1969," he said. "I congratulate KSC management, supervisors and workers for this excellent accident-free performance. It obviously took a cooperative and collective concern for safety by all employees to achieve this near perfect record."

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-106-71
FOR RELEASE: May 14, 1971 a.m.

SKYLAB 56-DAY TEST

Three men will spend up to 56 days in an altitude test chamber early next year at the National Aeronautics and Space Administration's Manned Spacecraft Center, Houston, to obtain medical data and evaluate medical experiment equipment for the Skylab Program, scheduled for flight in 1973.

The test will closely simulate Skylab mission conditions so that differences observed later during actual flight may be attributed to causes such as weightlessness which cannot be simulated in chamber tests. An altitude chamber is required to provide a low-pressure breathing atmosphere such as the astronauts will have in space.

The ground-based simulation test is directed primarily toward obtaining and evaluating baseline medical data from those medical experiments which reflect the effects of the Skylab environment. There are 16 medical experiments scheduled for Skylab involving, among others, studies of the cardiovascular system, the expenditure of energy to do measured work, and food and nutritional investigations. Secondary objectives of the test include the evaluation of selected items of experiment equipment, medical operating procedures and means of handling experiment data. In addition, this test will aid in training the ground-based medical operations team for their participation during the actual space flight.

Although the test team members have not yet been selected, members of the astronaut team are being considered for the test. While the primary emphasis of this study is directed at obtaining medical data, the test crew will also engage in a full schedule of activities involving work, eating, leisure, recreation and sleep. During the work portion of the day, the crew will conduct experiments, monitor the environment, evaluate the operation of experiment equipment and perform allied test functions.

During off-duty hours, the crew can select from onboard recreational activities such as television, tape recorders, chess, checkers, playing cards, sketching materials, exercise devices, books, writing materials or other personally determined items. Safety precautions include the presence of a medical safety officer with the authority to remove the test team members from the chamber or to abort the test for emergency medical reasons.

-more-

The test will be conducted in a 20-foot diameter altitude chamber located in Building 7 at the Manned Spacecraft Center which was used previously in the Gemini and Apollo programs. This chamber is being modified to resemble the crew quarters area of the Skylab Workshop. Simulating the flight environmental conditions, the cabin atmosphere will be 70 per cent oxygen and 30 per cent nitrogen at a total pressure of five pounds-per-square-inch. Carbon dioxide levels will be maintained witnin a 4.0 to 5.5 millimeters of mercury range, and temperature will remain 67 to 78 degrees Fahrenheit. Humidity will range from 45 to 60 per cent. Communications between the crew and the ground control will be similar to Skylab mission-type communications which will be augmented by closed circuit TV during the conduct of the medical experiments.

The Skylab Program objectives are to extend the duration of manned space flight and to carry out a broad range of experimental investigations. Of particular importance are a series of experiments aimed at medical research, Earth survey, solar astronomy, and selected scientific and manufacturing experiments. Skylab is an Earth orbital program scheduled for flight in 1973. The launch of an unmanned workshop will be followed by three separate launches of three-man crews using Apollo spacecraft. After docking with the previously launched workshop, the crews will inhabit the assembly for up to 28 days on the first visit and up to 56 days on each of the other two visits.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

MAY 17 1971

RELEASE NO: KSC-107-71
FOR RELEASE: Immediate

May 14, 1971

SPACEPORT HOST TO AEROSPACE EDUCATORS

KENNEDY SPACE CENTER, Fla.-- The Spaceport was host this week to aerospace educators preparing to direct summer space workshops for teachers in southeastern states.

Included in the three-day conference were a conducted tour of Cape Kennedy Air Force Station and the Spaceport, briefings on future space programs, a review of NASA educational programs, workshops about space activities and teacher programs and planning sessions for summer space workshops.

Among the briefings were presentations by E. J. Hecker, E. J. Popovich and R. B. Paulus of the KSC Apollo-Skylab Programs Office, and Darwin Brown, Space Shuttle Task Group Assistant Manager for KSC. H. R. Pyles, Chief of the Operations Control Branch in KSC's Support Operations Directorate, gave a special briefing on astronaut safety.

The NASA educational programs review and the workshop planning sessions were conducted by staff officials from NASA Headquarters, the Langley Research Center, the Marshall Space Flight Center and KSC. Representing NASA Headquarters was Everett E. Collin, Deputy Director, Educational Programs Division.

Three space science consultants for NASA conducted workshops on aeronautics, rocketry and living in space. Raymond R. Corey, Educational Programs Officer at KSC, was in charge of the workshop on Earth resources.

Two Florida educators headed workshops on teacher programs. Walter Kruschwitz of the University of South Florida was in charge of the in-service teacher program workshop and Dr. Marian Young of the University of Florida the pre-service teacher program workshop.

William D. Nixon, Chief, Educational Programs Branch at KSC, was responsible for planning and directing the conference.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-108-71
FOR RELEASE: Immediate

May 14, 1971

KENNEDY SPACE CENTER TO OBSERVE NATIONAL SMALL BUSINESS WEEK MAY 16-22

KENNEDY SPACE CENTER, Fla.-- The Kennedy Space Center will observe National Small Business Week May 16-22 in accordance with a Presidential proclamation.

Tom Davis, KSC small business specialist, said, "We hope to mark this annual observance by reminding small firms about the opportunities associated with doing business with the Government."

He pointed out that many companies miss opportunities because they don't maintain current listings with his office.

Bid proposals are impartially selected for mailing by computer on the basis of a contractor's stated qualifications and specialities listed in the KSC file.

Davis went on to note that the term small business is sometimes misleading since bids totalling nearly $5 million have been awarded this year to small firms supporting the Spaceport.

"Small businesses are expected to play an even greater role in coming months here at KSC as we begin constructing the support and launch facilities for the upcoming Skylab program," Davis said.

William Lohse, who directs the KSC Small Business Program, estimates that small firms will receive about one-third of the $12 million that will be spent on modifying launch facilities for the embryonic space station program.

Recently, the Holloway Corporation of Titusville, Fla., a small business firm, was awarded just under a million-dollar contract to build the 127-foot-tall launcher pedestal required to support the assembly, checkout and launch of Saturn IB space vehicles for Skylab.

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Small business firms receive bids through "setasides," a procedure by which procurement is reserved exclusively for companies which are not predominant in their fields and which employ less than 500 persons.

"The Kennedy Space Center emphasizes this program to aid and assist small business firms in getting a fair share of the dollars that are being spent by the Government," Davis said.

He noted that small business helps assure a sound national economy because it backs up the large contractors.

Small firms wanting to do business with the Spaceport must maintain a current Form 129 with Davis' office. He and his staff will brief persons unfamiliar with Government procurement procedures.

Interested persons may call Davis at (305) 867-7353, or write the Industry Advisory Section, AD-PRO-13, Kennedy Space Center, Fla. 32899.

The small business office also maintains a "bid board" at the Pass and Identification Building, adjacent to U. S. Highway 1 south of Titusville.

# # # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-108-71
FOR RELEASE: May 17, 1971

A series of three press briefings on science objectives of the Apollo 15 lunar landing mission, planned for launch July 26, will be presented at National Aeronautics and Space Administration headquarters, Washington, May 24 and 25.

At 10 a.m. EDT, Monday, May 24, Astronaut Alfred M. Worden, Command Module pilot, will describe his planned activities in lunar orbit, while his crewmates are carrying out the landing, and during the Earthward journey, when he will emerge from the command module to retrieve exposed camera film from the service module.

At 1:30 p.m. the same day, scientists responsible for the individual lunar orbital experiments will describe these briefly and answer questions.

At 10 a.m. Tuesday, May 25, scientists responsible for the lunar surface experiments, including the geology investigations at the Hadley-Apennine landing site, will describe them briefly and answer questions.

Models of a number of the experiments will be displayed.

All three briefings will be held in the NASA auditorium, Room 6104, 400 Maryland Avenue, S.W., Washington, D.C.

For further information, call Howard Allaway 962-0666.

The three briefings will be " piped" to the Kennedy Space Center for the benefit of those news media who desire to monitor them locally.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-109-71
FOR RELEASE: May 18, 1971

SECOND MARINER-MARS '71 LAUNCH

While no launcn date has been established for the second in the series of Mariner Mars '71 spacecraft, the current planning date for the launch of Mariner I is May 23.

A final launch date will not be established until the National Aeronautics and Space Administration management reviews the analysis of the failure of an Atlas Centaur to launch Mariner H on May 8.

Two teams at NASA's Lewis Research Center, Cleveland, and General Dynamics/Convair, San Diego, are conducting the analysis of the failure of the autopilot in the Centaur stage. The study to date has determined there was a piece part failure in the signal amplifier in the pitch channel of the autopilot.

The failure prevented proper rate gyro signals from reaching the servos which gimbal the Centaur engines to maintain proper attitude of the stage. The stage with the Mariner spacecraft still attached went into increasing oscillations until it tumbled out of control and landed some 900 miles downrange in the Atlantic Ocean.

Deputy Administrator George M. Low will review the failure analysis work at General Dynamics in San Diego, and at the Kennedy Space Center, FL.

In the meantime, an autopilot has been shipped to KSC from General Dynamics and has been installed in Atlas Centaur-23, being readied for the Mariner I launch. The autopilot has passed reacceptance tests and launch readiness tests are underway on AC-23.

At the Jet Propulsion Laboratory, scientists and engineers are revising the flight plan of Mariner I to assure the maximum scientific return from a single mission by accomplishing as many scientific objectives of both missions as possible.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-110-71
FOR RELEASE: May 18, 1971

KSC EXECUTIVES PARTICIPATING IN SKYLAB MANAGEMENT TOUR

KENNEDY SPACE CENTER, Fla.--Five executives from the Kennedy Space Center (KSC) are participating in a Skylab Senior Management Tour which began Tuesday at the Martin Marietta Corporation in Denver, Colorado and will conclude at the Spaceport on May 26.

Making the tour from KSC are Dr. Kurt H. Debus, Center Director; Raymond L. Clark, Director of Technical Support; John Williams, Director of Spacecraft Operations; Robert Hock, Deputy Director of Apollo-Skylab Programs; and Robert Heiser, Technical Assistant to the Center Director.

Miles Ross, KSC Deputy Director, is expected to join the group May 25 in St. L ouis.

The stops in the two-part tour -- May 18-19 and May 25-26 -- are in this order: Martin Marietta, Denver; North American Rockwell, Downey, California; McDonnell Douglas Astronautics Company, Huntington Beach, California; McDonnell Douglas, St. Louis; and KSC.

Other key NASA personnel taking part in the tour are Charles W. Mathews, Deputy Associate Administrator for Manned Space Flight, NASA Headquarters; William G. Schneider, Skylab Program Director, Headquarters, Dr. Eberhard Rees, Director of the Marshall Space Flight Center; Dr. William R. Lucas, Deputy Director of MSFC; Christopher Kraft Jr., Deputy Director of the Manned Spacecraft Center, and Astronauts Alan Bean and Charles Conrad.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

MAY 24 1971 BK9 #89

RELEASE NO: KSC-113-71
FOR RELEASE: May 19, 1971

KSC MEDICAL CHIEF TO ADDRESS SYMPOSIUM ON CLEAN ROOM TECHNOLOGY IN SURGERY SUITES

KENNEDY SPACE CENTER, Fla.--Dr. Alan C. Harter, Chief of Medical Services at the Kennedy Space Center (KSC), will address the banquet meeting Friday evening of the "Symposium on Clean Room Technology in Surgery Suites" being conducted May 21-22 at the Spaceport.

Dr. Harter will speak to approximately 100 medical doctors and technically-oriented medical personnel on "Biomedical Experiments for Skylab."

Skylab is the next manned program to follow the series of Apollo lunar landing missions. Numerous medical experiments will be carried out in the three missions in 1973 lasting up to 56 days to determine man's capabilities to live and work in space.

KSC Director Dr. Kurt H. Debus will give the welcome address at 9:30 a.m. Friday.

The conference is sponsored by the Midwest Research Institute Biomedical Applications Team of Kansas City, Missouri and the Office of Technology Utilization, NASA Headquarters.

Symposium speakers will present papers on "Microbiology of Surgery Suites" and discussions will be conducted on horizontal and vertical laminar air flow systems adaptable to surgical suites. Examples of installations will be illustrated.

The laminar air flow clean room principles were developed to meet the exacting needs of the Space Program. During assembly and checkout of space vehicle components, it is imperative that contamination be prevented.

These Space Program techniques in clean room technology are being adapted successfully to hospital surgical suites, making marked improvement in contamination control and thereby reducing greatly the chance of infections in operating rooms.

On Saturday morning, an eight-man panel will hold a forum on the application of a clean room technology to surgery suites. Problems and potential solutions will be discussed.

A tour of KSC will be conducted for attendees Saturday afternoon.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

MAY 28 1971

RELEASE NO: KSC-120-71
FOR RELEASE: May 26, 1971

TWO SPACE EDUCATION WORKSHOPS PLANNED AT KENNEDY SPACE CENTER

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center announced today that two space education workshops for teachers will be conducted at the Center this summer, June 28-July 9 and July 12-23.

These programs are open to both elementary and secondary teachers and are a cooperative effort between NASA's John F. Kennedy Space Center and the Florida university system. Graduate credit will be offered by the participating universities.

The teacher programs are designed to translate space age information and new technology into a usable form for the classroom.

On their stay at the Kennedy Space Center, teachers will receive basic concepts of the space program, demonstrations and activities for classroom use, the opportunity to observe KSC facilities, and participate in discussions with KSC scientists and engineers.

Teachers will also have the unique opportunity to observe KSC personnel at work preparing the Apollo 15 launch, scheduled July 26.

Interested teachers should contact:

William D. Nixon, Chief
Educational Programs Branch
John F. Kennedy Space Center, NASA
Kennedy Space Center, Fla. 32899
Telephone: AC 305 867-4004

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

MAY

RELEASE NO: KSC-121-71
FOR RELEASE: May 27, 1971

BUSINESS COMMUNITY INVITED TO GIVE VIEWS ON FEDERAL BUYING POLICIES AT MEETING

KENNEDY SPACE CENTER, Fla.--William M. Lohse, Procurement Officer at the Kennedy Space Center (KSC), said the Commission on Government Procurement has scheduled a public meeting June 1 in Orlando to provide the business community an opportunity to express views on Federal agencies' policies in buying goods and services.

Jack Dryer, Industry Advisory Office in Procurement, will represent the Spaceport at the meeting to begin at 9:00 a.m. in the Orange County Agricultural Center, 2350 East Michigan Avenue, Orlando. Similar meetings are being conducted in eight other cities across the country.

Commission Chairman Perkins McGuire said the Study Group on Commercial Products would receive suggestions that companies and businesses feel will improve the Government procurement process.

"The meeting should be of particular interest to any company that sells or would like to sell commercial products to the Federal Government," McGuire said.

Organizations or individuals who wish to present their views are invited to write to Robert J. Brown, Chairman, Commercial Products Study Group, Commission on Government Procurement, 1717 H Street, N.W., Washington, D.C. 20006.

"Time will be allotted accordingly to those indicating a preference for the morning or afternoon sessions," Brown said.

"Those who are unable to give advance notice to the Study Group are welcome to attend the meeting. They will be encouraged to make an oral statement and discuss their problems during the meeting."

In addition to its regular members, the Commercial Products Study Group has three Commission members who serve as advisors. They are: Senator Edward J. Gurney of Florida, Congressman Frank Horton of New York, and Peter Dierks Joers, assistant to the president, Weyerhauser Company.

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KSC
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MAY 28 ...

news release

RELEASE NO: KSC-122-71
FOR RELEASE: May 27, 1971

MARINER MARS SET FOR SATURDAY

National Aeronautics and Space Administration Administrator James C. Fletcher announced today that he has approved the launch of the Mariner I spacecraft toward the planet Mars. The earliest launch attempt time is 6:21 p.m. EDT, on Saturday, May 29.

The first of two planned flights during the 1971 launch window failed May 8, when the Centaur upper stage of the launch vehicle malfunctioned. A careful investigation has revealed that a small part -- an integrated circuit -- failed, apparently because a protective device, a diode, malfunctioned. This failure of the integrated circuit in the Centaur autopilot caused the vehicle to tumble. Tests were devised to assure that the integrated circuit and its protecting diode are sound in the vehicle that is now being readied for launch. These tests have been completed successfully.

In announcing his decision to proceed with the launch, Dr. Fletcher stated: "I have reviewed the results of the Mariner H failure analysis, and of the Mariner I Launch Readiness Review. I am satisfied that a complete and thorough job has been done, that the failure has been identified, and that proper corrective action has been taken. At the same time, I fully recognize that the Atlas/Centaur is an extremely complex vehicle, that there are literally thousands of parts and components that must function perfectly, and that a finite probability of failure must exist on each launch."

The launch window, in 1971, remains open until June 4, and can be extended to mid-June with a somewhat reduced propellant reserve. The next opportunity to send a spacecraft to Mars comes in 1973, but this opportunity is not available to the Atlas/Centaur/Mariner combination because of much higher energy requirements.

The planned trajectory (for a launch between May 28 and June 4) will bring the spacecraft to Mars on November 14. There it will be placed into an orbit that will meet, at least partially, the objectives of both previously planned Mariner 1971 flights: to map a major portion of the planet; and to repeatedly study selected areas to observe changes on the surface and in the atmosphere.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

JUN 1971

RELEASE NO: KSC-126-71
FOR RELEASE: June 2, 1971

KSC DIRECTOR OF ADMINISTRATION RECOGNIZED FOR COMMUNITY EFFORTS

KENNEDY SPACE CENTER, Fla.--George A. Van Staden, Director of Administration at the Kennedy Space Center, has received national recognition for "meritorius leadership" in the field of voluntary community planning.

Van Staden, who resides in Titusville, was one of eight recipients of the Newton D. Baker Certificate of Recognition presented in Chicago at a conference of leaders of the United Way of America last month.

The United Way of America is a voluntary effort developed over the years to raise funds and to plan and coordinate health and welfare programs.

Nominated for the award by the Community Services Council of Brevard County, Van Staden was cited for his "continuity of leadership" over the past five years. Singled out for special attention was his chairmanship from 1966 to 1968 of a community mental health committee whose efforts resulted in the opening of the county's first community mental health center.

In 1969, Van Staden was named as interim chairman of the board of trustees of the Brevard County Community Mental Health Centers. Since 1969 he has served as vice-chairman.

He has served as a director of the Brevard County United Fund, the Community Services Council of Brevard County and the North Brevard Youth Activities. He currently is a member of the Royal Oak Golf and Country Club board of governors, the North Brevard Hospital District board and the North Brevard YMCA advisory board.

Before his assignment as KSC's Director of Administration in 1965, Van Staden served as Executive Officer of the National Institute of Mental Health at Bethesda, Maryland.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

JUN 4 1971

news release

RELEASE NO: KSC-127-71
FOR RELEASE: June 2, 1971

SPACEPORT GEARING FOR APOLLO 15 TESTS

KENNEDY SPACE CENTER, Fla.--The Spaceport is gearing for a series of vital tests of the Apollo 15 space vehicle that will clear the way to launch the lunar landing mission on July 26.

Test Supervisor Jim Harrington said the space vehicle electrical mate test is scheduled for June 7. This will be the first time that the spacecraft is connected electrically with the launch vehicle's instrument unit.

The flight readiness test (FRT) -- an overall assessment of the space vehicle's ability to carry out the highly-sophisticated mission -- is scheduled for June 14-15.

The FRT will be followed by KSC's launch readiness review on June 21 and NASA's flight readiness review on June 24. These reviews will be based on the vehicle and spacecraft performance in the FRT.

The countdown demonstration test -- a dress rehearsal for the actual countdown which includes loading of the propellants and testing all systems in a coordinated effort -- is slated July 7-14.

While launch preparations and vehicle testing are in progress, the Apollo 15 prime and backup crews will be spending most of their time at KSC working in the simulators and practicing EVA maneuvers with the lunar roving vehicle on the lunar surface training area.

The prime crew is composed of Commander David Scott, Command Module Pilot Alfred Worden and Lunar Module Pilot James Irwin. The backups are Richard Gordon, Vance Brand and Harrison Schmitt.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

JUN 4 1971

news release

RELEASE NO: KSC-128-71
FOR RELEASE: June 2, 1971

24 EMPLOYEES AT SPACEPORT COMPLETE BASIC RADIOLOGICAL HEALTH COURSE

KENNEDY SPACE CENTER, Fla.--Twenty-four employees at the Kennedy Space Center recently completed an 80-hour, on-site course dealing with basic radiological health as a prelude to the Centers future involvement in nuclear power sources.

They were instructed by a five-man teaching team from the recently formed Environmental Protection Agency (EPA) of the Eastern Environmental Radiation Laboratory at Montgomery, Alabama.

The course dealt with radiation fundamentals, detection, measurement and protection. It also considered the biological effects of radiation and the principles of nuclear reactions and radionuclide analysis.

These subjects also were treated in training films which, in addition to lectures, helped prepare the students for a battery of examinations required for successfully completing the course.

Participants attended morning lectures and problem-solving sessions, devoting their afternoons to laboratory exercises.

The Training Auditorium's Room 115 was transformed into a nuclear laboratory housing Alpha, Beta and Gamma detection equipment and related apparatus. Lectures were conducted in a nearby room.

During a final field exercise, students conducted a painstaking outdoor search for harmless Plutonium 238 isotope discs.

Nat Koenig, Technical Support Directorate representative, who participated in the course, explained that the Plutonium 238 training discs contained the same material used in power sources of the SNAP-27 generators for the Apollo Lunar Surface Experiments Package (ALSEP).

Commenting on the course, Ernie Spivey, chief of KSC's Systems Training and Employee Development Branch, said that it will provide technical expertise for the Future Program Directorate's Radiological Working Group and the in-house Nuclear Electric Power Study and the Center's Radioisotopes Committee.

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Personnel who participated in the course were: Raymond Lisle and Georgia Brock, Information Systems; Dr. Alan Harter, Installation Support; Frank Horn, John Lyon, and Edward Popovich, Apollo-Skylab Programs and Daniel Masson and Ralph Yorio, Support Operations.

Boyd Williams, Design Engineering; Koenig and Robert Nelson, Technical Support; Kenneth Steel, Administration; Lee Hale and Huey Crocker, Manned Spacecraft Center; Ronald Meeker, Safety Office; James Thompson and Elton Whaley, North American Rockwell; George Bose, Jr., Grumman Aerospace Corporation; and John Allen, Charles Boardman, Julian Foster, Robert Martin, Neil Spencer and Charles Ward, Pan American World Airways.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

JUN 4 1971

news release

RELEASE NO: KSC-129-71
FOR RELEASE: June 2, 1971

MARINER 9 MID-COURSE MANEUVER

Mariner 9, on its 166-day cruise to Mars, will have its trajectory slightly altered on June 4 to carry it close enough to the planet so that it can be injected into Martian orbit.

Officials of the National Aeronautics and Space Administration and the Jet Propulsion Laboratory, Pasadena, Calif., said the planned mid-course maneuver requires a velocity change of about 15.6 miles per hour (seven meters per second).

The maneuver will change the arrival date at Mars from November 14 to November 13 to assure that orbital injection is well within the viewing period of NASA's Deep Space Network station at Goldstone, Calif., and that Mariner has the desired approach velocity.

On its present trajectory deliberately targeted away from Mars to satisfy planetary quarantine requirements, the 2,200 pound spacecraft would cross the Mars orbit at an altitude of about 16,000 miles (25,750 kilometers). The highly accurate launch from Cape Kennedy, Fla., on May 30 was provided by an Atlas Centaur launch vehicle.

The commands which align the spacecraft's rocket engine in the correct position for the maneuver, will be prepared in JPL's Space Flight Operations Facility and transmitted from the DSN station in Woomera, Australia.

Woomera will send a command to initiate the maneuver at 6:00 p.m. EDT on June 4, with rocket engine firing for a duration of 5.3 seconds scheduled for 8:22 p.m. The DSN station in Johannesburg, South Africa, also will be in view of Mariner and both will monitor maneuver performance.

Earth-spacecraft range at engine firing will be about 838,000 miles (1,340,800 kilometers). After the maneuver, Mariner will resume its cruise attitude by reacquiring the Sun and the star Canopus.

Following the successful launch phase of the mission, the spacecraft was prepared for the maneuver by venting the propulsion subsystem's propellant lines.

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The scan platform, which carries the science instruments, was unlatched Monday. This allows the turret-like platform to slew in two planes for instrument calibration en route to Mars and for scientific experiments at the planet.

NASA and JPL officials report that all systems aboard Mariner 9 are working well.

Mars was 63 million miles (100.8 million km) from Earth when Mariner 9 was launched at 6:23 p.m. EDT May 30.

About half-way through the trip, on August 11, Mars will make its closest approach to Earth -- 34.9 million miles (55.8 million km). When Mariner arrives at Mars on November 13, the planet will be 75.5 million miles (120.8 million km) from Earth. The spacecraft's arcing trajectory will have covered 247 million miles (395.2 million km).

At Mars, Mariner 9 will aim for an orbit with an inclination of 65 degrees, a period of 12 hours, a periapsis of 750 miles (1,200 km) and an apoapsis of 10,700 miles (17,265 km). This mission plan is designed to allow Mariner 9 to accomplish as many mission objectives as possible of the two missions originally planned in Mariner Mars '71. A launch vehicle failure on May 8 prevented Mariner 8 from achieving a trajectory to Mars.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

JUN 14 1971

news release

RELEASE NO: KSC-135-71
FOR RELEASE: June 10, 1971

CENTER MANAGEMENT OF SHUTTLE

The National Aeronautics and Space Administration has announced its management plans for the Space Shuttle Program of its Office of Manned Space Flight.

Overall management of the Space Shuttle Program will be in the Headquarters Office of Manned Space Flight which will be responsible for detailed assignment of responsibilities, basic performance requirements, control of major milestones and funding allocations to the various NASA field centers.

Dale D. Myers, Associate Administrator for Manned Space Flight, has assigned responsibilities to the three Manned Space Flight centers for the Space Shuttle Program as follows:

--Manned Spacecraft Center, Houston, will have program management responsibility for program control, overall systems engineering and system integration, and overall responsibility and authority for definition of those elements of the total system which interact with other elements, such as total configuration and combined aerodynamic loads, MSC also will be responsible for the orbiter stage of the Space Shuttle.

--Marshall Space Flight Center, Huntsville, Ala., will be responsible for the booster stage and the main engines for the Shuttle.

--Kennedy Space Center, Fla.,will be responsible for design of launch and recovery facilities.

All three centers will have personnel located at MSC as part of the overall systems engineering and systems integration activity.

The Space Shuttle is planned as a reusable space vehicle designed to carry payloads between Earth and near-Earth orbit. Missions for the Shuttle include deployment of unmanned spacecraft, satellite repair and retrieval, space rescue, and short-duration orbital science and applications.

The NASA FY 1972 Budget now before Congress includes $100 million for proceeding with shuttle main engine development and for initiating development or for continuing design studies of the shuttle airframe depending on the results of studies now underway.

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PUBLIC INFORMATION OFFICE, AREA CODE 305-867-2468

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-136-71
FOR RELEASE: SUNDAY, June 13, 1971

EDWARD F. PARRY NAMED KSC DEPUTY CHIEF COUNSEL

KENNEDY SPACE CENTER, Fla.--Edward F. Parry was appointed Deputy Chief Counsel to the Kennedy Space Center, effective June 13.

A graduate of the University of Oklahoma with degrees in aeronautical engineering and law, he is a member of the bar in Florida and Oklahoma.

He joined NASA as an attorney in the Office of the Chief Counsel at the Manned Spacecraft Center in April 1962. He was named Counsel to the NASA Office of Manned Space Flight in February 1967.

Parry will serve as deputy to KSC Chief Counsel John O'Brien.

Parry, his wife, the former Diane Gratton of Oklahoma City, Oklahoma, and their three sons are moving from their present home in Laurel, Maryland, to Brevard County.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

JUN 14 1971

RELEASE NO: KSC-137-71
FOR RELEASE: June 11, 1971

O'BRIAN YOUTH SEMINAR SCHEDULED AT KSC

KENNEDY SPACE CENTER, Fla.--Seventy one young men from all 50 states, the District of Columbia and 10 foreign countries will receive a firsthand look at America's space program during a week-long seminar at the Kennedy Space Center beginning Monday, June 14.

The seminar is sponsored by the Hugh O'Brian Youth Foundation in cooperation with the National Association of Student Councils and the National Aeronautics and Space Administration.

"The seminar will enable these young men to learn about space by observing activities in Spaceport work areas and by talking with experts in the field," said William Nixon, chief of KSC's Educational Branch.

NASA launch officials, astronauts and several public figures will participate along with O'Brian.

Former Vice President Hubert Humphrey will be the guest speaker at the opening session on Monday.

Other noted visitors expected to attend the seminar throughout the week include Brig. Gen. Chappie James, Jr., Deputy Assistant Secretary of Defense for Public Affairs; Representative Alphonzo Bell of California; former Governor of Pennsylvania Raymond Schaefer, who is chairman of the Federal Marijuana and Drug Abuse Commission; and James Plinton, a vice president of Eastern Airlines.

The youngsters, who range in age between 15-16 years old and are high school sophomores and juniors, were chosen from nearly two million boys representing 10,000 schools.

They were selected on the basis of their community and school service, good citizenship and scholarship accomplishments.

The seminar opens Monday with an in-depth briefing at the crawler-transporter, the huge tracked vehicle which carries Saturn V space vehicles to the launch pad.

The youths will spend the remainder of the first day touring the Launch Control Center and the launch pad facilities being used to prepare the Apollo 15

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space vehicle for launch to the Moon July 26, and hearing talks by Senator Humphrey, KSC Director Dr. Kurt H. Debus and Deputy Director Miles Ross.

Later in the week they will visit the Flight Crew Training Building and view the simulators being used by the Apollo 15 astronauts.

The boys also will tour astronaut medical facilities and spacecraft assembly areas in the Manned Spacecraft Operations Building.

Stops at the Central Instrumentation Facility and the Unified S-Band Station will provide them an overview of telemetry and tracking operations at the Spaceport.

The 71 youths also will visit former launch sites at Cape Kennedy as part of the historical aspect of the space program, and will stop at Launch Complex 36, from which Mariner 9 was launched to Mars May 30.

They will view the Air Force Museum; Comples 5-6, launch site of America's first astronaut, Alan Shepard; the Mercury Atlas and Gemini astronaut launch sites, Complexes 14 and 19; and Complex 34, site of the first manned Apollo launch.

Spaceport officials will brief the participants on future activities, including the Skylab and Space Shuttle programs.

The busy itinerary includes time each day for question and answer periods between the boys, space officials and visiting national personalities. In addition to space topics there will be general discussions concerning the major problems facing youth today.

KSC Director Dr. Kurt H. Debus and several key Spaceport directors will participate in the closing summation on Friday. With Dr. Debus will be Miles Ross, KSC Deputy Director; Walter Kapryan, Director of Launch Operations; Raymond Clark, Director of Technical Support; Robert Hock, Manager, Apollo-Skylab Programs; Gen. Frederic Miller, Director of Installation Support; George Van Staden, Director of Administration; Grady F. Williams, Director of Design Engineering; and G. Merritt Preston, Director of Center Planning and Future Programs.

A farewell dinner will be held Friday night.

The boys will be housed at Patrick Air Force Base.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

JUN 1 0 1971

news release

RELEASE NO: KSC-139-71
FOR RELEASE: June 16, 1971

SPACE SHUTTLE STUDIES

The National Aeronautics and Space Administration is examining the advantages and disadvantages of a "phased approach" to the development of a reusable space shuttle system in which the orbiter vehicle would be developed first and initially tested with an interim expendable booster.

In a "phased approach", full scale hardware development of a reusable booster would be started later, but some design and preliminary development work for it would proceed concurrently with development and test of the orbiter.

For the interim booster NASA and its industrial contractors will study the use of a modified Saturn IC (first stage of the Saturn V that launches Apollo flights to the Moon), a booster based on the Titan III, and a booster system using solid rockets.

The contractor studies now nearing completion are confirming the feasibility and desirability of a reusable Space Shuttle as the key element of a space transportation system which will meet the continuing needs and long-term objectives of the United States in space.

"The preferred configuration which is emerging from these studies," NASA Administrator James C. Fletcher said today, "is a two-stage delta-wing reusable system in which the orbiter has external propellant tanks that can be jettisoned.

"Although our studies to date have mostly been based on a 'concurrent approach' in which development and testing of both the orbiter and the booster stages would proceed at the same time, we have been studying, in parallel, the idea of sequencing the development, test, and verification of critical new technology features of the system. We now believe that a 'phased approach' is feasible and may offer significant advantages.

"We believe that the additional studies we are now undertaking, together with those previously undertaken and now being completed, will put us in a position to make a decision this fall on the technical and programmatic approach to be followed in the Space Shuttle program."

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

JUN 18 1971

RELEASE NO: KSC-140-71
FOR RELEASE: THURSDAY A.M.s
June 17, 1971

APOLLO CREW HEALTH PLANS OUTLINED

KENNEDY SPACE CENTER, Fla.--More than 170 persons at the Kennedy Space Center and the Manned Spacecraft Center, Houston, Texas, began reporting sniffles and other possible illness symptoms last Friday to Spaceport health officials in preparation for the Apollo 15 crew prelaunch isolation program.

Known as primary contacts, these persons include members of the astronauts' families and personnel whose jobs bring them in direct contact with the space pilots during the three-week isolation program.

The illness reporting period will continue through August 12, five days after astronauts David Scott, Alfred Worden and James Irwin splash down in the Pacific Ocean at the completion of their lunar landing mission.

First used prior to Apollo 14, the primary contact system is designed to minimize a flight crew's exposure to infectious or contagious diseases during the quarantine period.

Dr. Alan Harter, chief of KSC's Medical Services Office, said that a control group will be used for the first time to determine whether there is a higher incidence of illness among the primary contacts or representative KSC workers who do not deal directly with the astronauts during this period.

Spaceport health personnel will be working under a new handicap since schools will be closed during the Apollo 15 isolation program.

Previously, they looked to schools, both in the KSC and MSC areas, to augment reports of illness among children of primary contacts.

Dr. Hal Eitzen, a University of Texas School of Public Health epidemiologist attached to the astronaut medical program at KSC, noted the importance of schools reporting illnesses among children of primary contacts. He said that nearly half of all reported illnesses were documented by the schools.

Dr. Eitzen explained that in most cases prime contacts were unaware their children were ill and kept home from school since they usually left for work before the youngsters awakened.

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Gary McCollum, MSC's Medical Surveillance Office Manager at KSC, underscored the significance of primary contacts reporting illnesses to his office in view of school vacations during Apollo 15 prelaunch preparations.

According to Dr. Eitzen, most illnesses reported by primary contacts prior to Apollo 14 consisted of upper respiratory infections, colds and strep throats.

Since most key Apollo 15 personnel had performed the same functions for Apollo 14, most immunizations are current. Nine immunizations protect them from illnesses and diseases ranging from influenza to smallpox.

All designated persons are undergoing current physicals in preparation for the health program, Dr. Harter said.

The same precautions taken during the Apollo 14 health program to insure a clean environment for the flight crew will be used again.

The air conditioning units in the Manned Spacecraft Operations Building and in the Flight Crew Training Building contain air filtration systems similar to those used in hospital operating rooms. These biological filters screen out 99 percent of atmospheric dust and particles and 97 percent of airborne bacteria.

A special entrance for the astronauts has been installed at the Flight Crew Training Building, allowing them to travel directly to their work areas without going to rooms containing non-primary contacts.

The airtight glass partition in a Flight Crew Training Building conference room will be used during discussions between the astronauts and those who are not primary contacts.

Colorful posters drawn by cartoonist Johnny Hart have been distributed in areas used by primary contacts to remind them of the importance of reporting illnesses during the three-week isolation period preceding Apollo 15.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RELEASE NO: KSC-141-71
FOR RELEASE: THURSDAY P.M.s
June 17, 1971

APOLLO 16 SITE SELECTION

A mountainous highland region of the Moon has been selected as the exploration site for the Apollo 16 mission, presently scheduled to carry out the fifth U. S. manned lunar landing in March 1972.

The landing point selected by the National Aeronautics and Space Administration is Descartes, named for a crater lying to the south, and is about nine degrees east and 16 degrees south of the center of the Moon as viewed from Earth.

Descartes is a key site in the lunar exploration program, complementing the 1969 Apollo 11 and 12 missions to maria, the Apollo 14 landing in the Fra Mauro uplands last February, and the planned Apollo 15 landing next month at Hadley-Apennine, a northern plain flanked by a deep gorge and high mountains.

Descartes lies in the central lunar highlands across one of the topographically highest regions on the Earth-side hemisphere. The site provides two distinct primary sampling objectives which are expected to provide material from which scientists can obtain data to fill gaps in the lunar models so far developed.

The first sampling objective, on which the astronauts will land, is the highlands basin fill. This is a volcanic-appearing material, flooding many of the large old highlands craters. The geologic evidence indicates that this material is older than the old mare sampled on Apollo 11 and 12 (about three and one-half billion years old) but younger than the Imbrium basin ejecta sampled on Apollo 14. When combined with the expected very old rocks from Apollo 15 at the Hadley- Apennine site, these samples should help scientists develop the story of lunar evolution. Near the landing site are two young large craters (about one-half mile across), which have thrown out large blocks of the basin fill where the astronauts plan to obtain fresh samples.

The second sampling objective is a topographically hill, grooved and furrowed, terrain again thought to be volcanic. Called uplands volcanics, the area is thought to be of similar age but of a different composition than the basin fill.

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Much as the mare basalts are giving clues to the lunar interior composition in mare regions, it is thought that the upland volcanics will yield data on the interior composition of the thick highlands crust.

It is also expected that information will be obtained bearing on the processes that created the highlands which cover more than three quarters of the lunar surface. These processes are thought to have had their beginning s soon after the origin of the solar system four and one-half billion years ago.

The astronauts will again use the Lunar Roving Vehicle, currently planned to be carried for the first time on Apollo 15, to transport them to prospective important locations determined prior to the mission and to other points they might select during their exploration. Contingency walking traverses will also be planned to accomplish as many of the scientific objectives as possible.

The astronauts will deploy a science station, the Apollo Lunar Surface Experiments Package (ALSEP), containing a passive seismometer, a magnetometer, a heat flow detector, and an active seismic experiment. In addition, other surface instruments will be a far UV camera/spectroscope, a cosmic ray detector and a portable magnetometer.

The passive seismometer will be looking primarily at two things. First, the scientists expect to find differences between the seismic activity or number and size of moonquakes beneath the highlands as compared with the maria. Second, analysis of the time that moonquake seismic waves take to travel will enable scientists to determine the density of the highlands crust and thus to see if they are analogous to the Earth's continents, which are relatively light and "floating" on a denser mantle.

The active seismic experiment will be used to help determine the thickness of the lunar soil layer, formed by meteoroid impact, and the depth of the upland basin fill in the old crater. The two magnetometer experiments are designed to establish the levels of magnetism in the highlands to compare with that seen in the mare regions. The Descartes measurement will be a key one in trying to decipher the origin of lunar magnetism.

The magnetometer will also collect data pertaining to the electrical conductivity of the lunar interior. In turn this data can be used to derive the interior temperature and will thus complement the heat flow and seismic data.

The Apollo 16 mission will provide an opportunity to obtain heat flow measurements on a highlands mass. Such data bears on the interpretation of the thermal history of the Moon and, when compared with data obtained at the mare sites, can lead to better knowledge of the origin of the very diverse maria and highlands.

The far UV camera/spectrograph is designed to obtain photographs of celestial objects or areas that are either emitting energy or are absorbing it from atomic hydrogen. The data obtained from this experiment will provide i information on the composition, density, distribution, and motion of interstellar, interplanetary, and intergalactic gas clouds which will in turn enhance our understanding of the structure and evolution of the galaxy. The data will also provide information on the Earth's plasma environment.

The cosmic ray detector is designed to acquire data on the origin and source mechanism of high velocity cosmic rays. More specifically, it will lead to information on the elemental abundances, energy, and flux of primary cosmic ray nuclei. By flying the detector on an Apollo mission, the cosmic rays are detected beyond the distrubing effects of the Earth's atmosphere and magnetic field.

Apollo 16 will be the second mission to carry a large set of orbital sensors in the Service Module. The instruments are identical to those to be carried on Apollo 15 and include cameras, geochemical indicators, and a subsatellite with particles and fields detectors. The set of instruments will be used to extend our knowledge of the Moon and to extrapolate ground truth data to lunar areas which cannot be visited.

The subsatellite is a small satellite that will be ejected from the Service Module during the mission and remain in lunar orbit after the astronauts return to Earth. It will contain particle detectors and a magnetometer, thus providing data to correlate with the surface magnetometer and particle detectors left on the surface by this and the Apollo 15 mission. Additionally, it will carry an S-band transponder to aid in the determination of gravity anomalies.

Apollo 16 will be commanded by John W. Ycung, a Navy Captain, with Thomas K. Mattingly II, a Navy Lieutenant Commander, as Command Module Pilot and Charles M. Duke, an Air Force Lieutenant Colonel, as Lunar Module Pilot. The backup crewmen are Fred W. Haise, Jr., a civilian; Stuart A. Roosa, an Air Force Lieutenant Colonel; and Edgar D. Mitchell, a Navy Captain.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-152-71
FOR RELEASE: June 30, 1971

GENERAL ELECTRIC CONTRACT AT SPACEPORT IS RENEWED

KENNEDY SPACE CENTER, Fla.--The National Aeronautics and Space Administration's (NASA) Kennedy Space Center (KSC) has awarded a $4,968,330 contract renewal to the General Electric Company's Apollo Systems Division, Daytona Beach, Florida.

The cost plus fixed fee contract extends from July 1, 1971, through June 30, 1972. The first-year contract ends on June 30 this year.

The contract extension calls for General Electric to continue furnishing personnel and equipment for maintenance and operation of Acceptance Checkout Equipment and Quick Look Data Systems designed and built by G. E.

It also provides for continuation of logistic and engineering support to the KSC Director of Launch Operations.

KSC is launch site for all of NASA's manned and unmanned launches in Florida and is responsible for its unmanned launches from the Western Test Range in California.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-153-71
FOR RELEASE: June 30, 1971

MCDONNELL DOUGLAS CORP. AWARDED $1,510,002 CONTRACT MODIFICATION

KENNEDY SPACE CENTER, Fla.--The National Aeronautics and Space Administration has awarded a $1,510,002 contract modification to the McDonnel Douglas Corp., Huntington Beach, California, for work in the Skylab Program at the Kennedy Space Center and the Air Force Eastern Test Range.

The contract extension, which runs from July 1 through December 31, 1971, calls for continuation of operations, activation and integration planning for the Orbital Workshop in the Skylab Program.

Skylab is an Earth orbital space station scheduled for launch in 1973. Its major goals are to help determine man's capability to work in space for long periods of time, to study the Sun and its effect on Earth, and to make a detailed study of the Earth's resources.

KSC is the launch site for NASA's manned and unmanned launches in Florida and for its unmanned launches at the Western Test Range in California.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-154-71
FOR RELEASE: June 30, 1971

CHRYSLER CONTRACT EXTENSION FOR SKYLAB

KENNEDY SPACE CENTER, Fla.--The NASA Kennedy Space Center has awarded a two-month extension of a contract with the Chrysler Corp., New Orleans, La., in the amount of $1,204,621 for work to be performed with the Saturn IB launch vehicle for the Skylab Program.

The modification extends the present contract from July 1, 1971 to September 30, 1971. The estimated total cost of the basic cost-plus-fixed fee contract is $12,171,314.

The contract extension covers a follow-on effort to provide prelaunch, launch, and post-launch services in connection with the Saturn IB first stage, including operation and maintenance of launch support equipment for the Skylab Program at Launch Complex 39.

The Skylab orbital workshop will be flown by NASA in 1973. Some 24 hours after the experimental space station is in orbit, three astronauts will be launched by a Saturn IB rocket to rendezvous and dock with the Skylab station and spend as much as 28 days on board performing a variety of scientific and applications experiments.

The Chrysler Corp. is prime contractor for the Saturn IB launch vehicle.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-155-71
FOR RELEASE: July 1, 1971

SPACE SHUTTLE STUDIES EXTENDED

The National Aeronautics and Space Administration has extended its space shuttle preliminary design contracts with four industry teams.

The companies are: McDonnell-Douglas Corp., St. Louis, Mo., with Martin-Marietta as a major subcontractor; North American Rockwell Corp., Downey, Calif., with General Dynamics as a major subcontractor; Grumman Aerospace Corp., Bethpage, N. Y., with The Boeing Co. as a major subcontractor; and Lockheed Aircraft Corp., Burbank, Calif.

The fixed price contracts are extended for four months effective July 1, 1971. Each company has been requested to study the advantages and disadvantages of a "phased approach" to the development of the space shuttle in which the orbiter vehicle would be built first and initially tested with an interim expendable booster. Based on data from these studies, NASA expects to decide this fall if a "phased development" of the shuttle will be undertaken instead of concurrent development of both the orbiter and booster.

Three of the contracts are valued at approximately $2,800,000 each; the contract with Lockheed, at approximately $1,400,000.

Candidate interim expendable launch vehicles include a modification of the S-IC (first) stage of the Saturn V launch vehicle; an outgrowth of the Tital III rocket; a single 260-inch-engine solid booster; and multiple 120-inch or 156-inch solid rockets.

The team headed by McDonnell-Douglas will study solids and the Titan type; Grumman, the S-IC and solids; Lockheed and North American Rockwell solid booster variations.

The extended studies also will look at orbiter configurations having external, expendable hydrogen and oxygen propellant tanks and smaller payload bays.

The McDonnell-Douglas and Lockheed studies are managed by the Marshall Space Flight Center, Huntsville, Alabama, and the North American Rockwell and Grumman studies by the Manned Spacecraft Center, Houston.

-more-

The shuttle will reduce both launch and payload costs of Earth orbital missions. Among the user-services will be the deployment of unmanned spacecraft, satellite repair and retrieval for refurbishment and reuse, space rescue, short-duration science and applications, and ultimately space station supply.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

JUL 12 1971

news release

RELEASE NO: KSC-156-71
FOR RELEASE: July 6, 1971

APECO CORPORATION RECEIVES $303,360 CONTRACT FOR KENNEDY SPACE CENTER OFFICE COPYING EQUIPMENT

KENNEDY SPACE CENTER, Fla.--The APECO Corporation, 2100 W. Dempster Street, Evanston, Illinois, has received a $303,360 contract to provide office copying equipment to the Kennedy Space Center.

The contract calls for provision of copying equipment, supplies and maintenance at NASA locations at KSC and Cape Kennedy during a one year period beginning July 1, 1971.

The Kennedy Space Center is the National Aeronautics and Space Administration's launch organization for manned and unmanned space vehicles in Florida and for unmanned launches at the Western Test Range in California.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-157-71
FOR RELEASE: July 7, 1971

SUNDAY DRIVE-THRUS SUSPENDED FOR APOLLO 15

KENNEDY SPACE CENTER, Fla.--Sunday drive-through tours of the Cape Kennedy Air Force Station and NASA Kennedy Space Center will be suspended for the next three weeks, starting July 11, because of Apollo 15 launch operations.

The Apollo 15 mission is scheduled for launch on July 26. Some propellants have already been loaded aboard the spacecraft and launch vehicle, creating more hazardous conditions in the launch pad area.

As on previous launches, special security procedures will be implemented in areas critical to mission operations.

Public access to the Visitor Information Center via KSC Gate 2, State Road 3, will be suspended July 19.

The NASA/TWA daily bus tours and Visitor Information Center will continue to operate normally except for the launch day itself when the tours will be suspended.

Normal operations will resume as soon as conditions permit following the Apollo 15 launch.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

JUL 29 1971

news release

RELEASE NO: KSC-192-71
FOR RELEASE: July 28, 1971

TWIN LUNAR ROVER STAMPS TO BE INTRODUCED AT KENNEDY SPACE CENTER

KENNEDY SPACE CENTER, Fla.--A new twin 8-cent stamp, featuring the lunar rover carried on the Apollo 15 mission, will be introduced at this Center and the Manned Spacecraft Center, Houston, Texas. Collectors should forward envelopes to reach either location not later than July 30, 1971

Viewed together, the twin stamps show, on the left, the landing craft on the lunar surface with Earth and Sun above, and on the right the jeeplike rover carrying two astronauts.

The Philatelic Division of the Post Office Department has set up a work area in the west wing, Visitor Information Center at KSC, to cancel first day issues. The VIC is six miles east of US Highway 1 and can be reached via Gate 2, on State Road 3, Merritt Island or via Gate 3 which connects with highway 1 two miles south of Titusville.

Cancellation and issuance of stamps will begin upon receipt of an order from the Postmaster General, Winton M. Blount, which may occur during July 31, 1971. Collectors should forward addressed envelopes to "Space Achievement Stamp, Postmaster, Kennedy Space Center, Florida 32815."

Covers will be serviced with a single stamp for 8 cents or with a pair containing the twin design for 16 cents. Covers should be plainly marked in upper right corner to indicate the number to be affixed. Personal checks cannot be accepted.

The VIC opens at 8 a.m. and closes at 8 p.m. daily.

The stamps will go on sale at all Post Offices, after release by the Postmaster General, on the first business day on which the order was issued or the next business day after the order. There will be no sale or cancellation activity at the Kennedy Space Center Sunday, August 1, 1971.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

AUG 16 1971

RELEASE NO: KSC-201-71
FOR RELEASE: August 13, 1971

APOLLO 17 CREW NAMED

The National Aeronautics and Space Administration today named Astronauts Eugene A. Cernan, Ronald E. Evans, and Harrison H. (Jack) Schmitt as the prime crew for Apollo 17, the last scheduled lunar landing mission.

Backup crewmen are David A. Scott, Alfred M. Worden, and James B. Irwin, who recently completed the Apollo 15 mission.

Cernan, commander, and Schmitt, the Lunar Module pilot, will explore the lunar surface while Evans, the Command Module pilot, conducts extensive scientific experiments in lunar orbit.

Schmitt, who has a Ph. D. degree in geology, will be the third holder of a doctorate to land on the Moon. Astronauts Edwin E. Aldrin, Jr., and Edgar D. Mitchell, Lunar Module pilots of Apollos 11 and 14, respectively, have doctor of science degrees.

Apollo 17 is scheduled for launch in December 1972. Final choice of the lunar landing site has not yet been made. The 12-day mission will continue the emphasis on both lunar surface and lunar orbital science.

Lunar surface stay time will be up to 68 hours, and three exploration periods of up to seven hours each are planned. A lunar roving vehicle will be used, and an Apollo Lunar Surface Experiments Package will be deployed.

Mapping of the Moon and several scientific experiments will be continued from lunar orbit. Evans will leave the spacecraft to retrieve film from cameras in the Service Module during the trip back to Earth.

Cernan, 39, a Navy captain, has accumulated 264 1/2 hours in space aboard Gemini 9 and Apollo 10. On his Gemini 9 extravehicular activity he became the first man to stay outside a spacecraft for a full revolution of the Earth. During Apollo 10 he and Col. Thomas P. Stafford descended to within eight miles of the lunar surface for the final checkout of the Apollo spacecraft before the first manned lunar landing. Cernan is married and has one daughter.

-more-

Evans, 37, a Navy commander, has not yet flown in space. He was backup Command Module pilot for Apollo 14 and served on support crews for Apollos 7 and 11. Evans is married and has a daughter and a son.

Schmitt, 36, is a civilian. Apollo 17 will be his first space flight. He was backup Lunar Module Pilot for Apollo 15 and has been involved in geology training for all lunar landing crews. Schmitt is single.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

AUG 17 1971

news release

RELEASE NO: KSC-202-71
FOR RELEASE: August 13, 1971

KSC CONTRACT AWARD TO MERRITT ISLAND FIRM

KENNEDY SPACE CENTER, Fla.--The NASA Kennedy Space Center has awarded a $103,025 contract to the W & J Construction Corp. of Merritt Island, Fla., to build a foundation and related facilities for a new tracking antenna site at the Spaceport.

The work, to be performed between August 9 and November 12, 1971, includes furnishing labor, materials and services for construction of a foundation for a second 30-foot diameter antenna at the Goddard Space Flight Center Unified S-Band site at KSC.

Under the contract, W & J Construction will reroute an access road, relocate a drainage canal and place the foundation. The antenna will be furnished by the Government and installed by another contractor.

A total of eight proposals were received for the construction project.

# # #

W & J Construction address: P. O. Box 941, Merritt Island, Fla. 32952

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-203-71
FOR RELEASE: August 13, 1971

SUMMER YOUTH RECEIVE CERTIFICATES AT KSC CEREMONY

KENNEDY SPACE CENTER, Fla.--Sixty one Brevard County high school students received certificates today in recognition of their participation in the 1971 Federal Summer Employment Training Program for Youth at the Kennedy Space Center. Six others working at KSC offices at the Western Test Range in California were honored in absentia.

Community leaders and Spaceport officials participated in the ceremony at the Training Auditorium, located a few miles from the Apollo 15 launch site.

In his welcoming address to the students, KSC's Deputy Director Miles Ross thanked the youths for being a part of the nation's space program and for their help in the recent Apollo 15 launch.

John Diggs, a former Brevard County high school teacher associated with the Office of Economic Opportunity in Atlanta, Georgia, said today's younger generation has more potential than any in the nation's history. He challenged the summer program participants to apply the knowledge learned at the Spaceport to future endeavors.

KSC Summer Employment Coordinator James Lane said the high school students performed administrative and clerical functions and learned the fundamentals of proper work habits. They also attended short courses designed to supplement their practical work experience.

Another major objective of the program, according to Lane, is to encourage students to continue their education. He noted that several former Summer Aid workers have gone on to college as a result of the training and financial help received at KSC.

Others participating in the awards ceremony included: Brevard County Commissioner Lee Wenner, of District 4; Mayor Percy Hedgecock of Satellite Beach, representing the Brevard County League of Municipalities; Ben Hursey, chief of KSC's Personnel Office; Mrs. B. B. Whisenant, counselor for the Summer Aid P rogram and Nathaniel Pilate, Equal Opportunity Officer at the Spaceport, who served as master of ceremonies.

Reverend Hugh Brockington, of the Metropolitan Baptist Church of Cocoa, delivered the invocation at the start of the ceremony, and Chester Johnson, a Summer Aid student, led the audience in the Pledge of Allegiance.

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AUG 26 1971

KSC

KENNEDY SPACE CENTER, FLORIDA 32899

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-204-71

FOR RELEASE: August 24, 1971

KSC SHUTTLE RANGE SAFETY CONTRACT AWARDED TO TRW

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center has awarded a $237,156 contract to TRW Systems Group, TRW, Inc., Redondo Beach, California, for a study of range safety considerations in launching and flying the Shuttle.

TRW will analyze possible flight and operational hazards to people, the environment, and communities, including impact of the Shuttle flight test program.

The study, now in progress at the Spaceport, will continue through June 30, 1972.

KSC is the National Aeronautics and Space Administration's launch organization for manned and unmanned space vehicles in Florida and for unmanned NASA flights at the Western Test Range in California.

# # #

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

AUG 26 1971

RELEASE NO: KSC-205-71
FOR RELEASE: August 24, 1971

ATS-3 ANTENNA PROBLEM

A problem that in the past has pretty much come and gone with the summer Sun has hung on longer than usual this year according to National Aeronautics and Space Administration officials in charge of the Applications Technology Satellite-3 spacecraft.

ATS-3 is in synchronous or "stationary" orbit at 70° N Longitude, 22,300 miles above Colombia.

The problem, a locked antenna control system on ATS-3, has caused the almost four-year-old experimental satellite to stop transmitting weather pictures as well as other data. This is also causing problems for many TV weathermen and viewers across the country who have been used to seeing the spacecraft's western hemisphere cloud cover or storm pictures.

NASA offocials believe the 805-pound spacecraft gets heated up when the Sun is north of the equator in the summer--and, with the antenna located on the top and north side of the spacecraft, it probably overheats the drive or control system of the antenna causing it to stop spinning.

The spacecraft spins at 100 revolutions per minute and the antenna spins in the opposite direction at almost the same speed, which, when coupled with the motion of the satellite in its orbit, keeps the antenna pointed toward Earth.

About mid-July officials at NASA's Goddard Space Flight Center, Greenbelt, Md., had trouble making the antenna drive at the necessary speed. It would drop to as low as 80 or 50 RPMs or even stop. A few days later it cleared up and worked well. Then in early August the problem began again only this time the antenna spin rate went to zero.

If the ATS-3 situation is consistent with past problems of a similar nature it will recover as the Sun slowly moves south.

ATS-3 was launched on an Atlas-Agena rocket from Cape Kennedy, Fla., November 5, 1967. It long ago satisfied all primary and secondary goals set for it by NASA and operation of the onboard weather camera was turned over to the National Oceanic and Atmospheric Administration in 1970 to aid in its weather forecasting operations.

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PUBLIC INFORMATION OFFICE, AREA CODE 305-867-2468

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

SEP 7 1971

RELEASE NO: KSC-209-71
FOR RELEASE: September 2, 1971

IBM RECEIVES $1, 540,725 CONTRACT MODIFICATION TO SUPPORT SATURN LAUNCH OPERATIONS FOR SKYLAB

KENNEDY SPACE CENTER, Fla.--The NASA Kennedy Space Center has awarded a $1,540,725 contract modification to IBM Corp., Gaithersburg, MD, to provide launch support for Saturn launch vehicle instrument units for the Skylab program.

The modification increases the basic contract value to $34,767,884. The period of performance extends from January 1 to December 31, 1972. IBM is prime contractor for the instrument unit which provides flight guidance for Saturn V and Saturn IB launch vehicles.

Both vehicles will be used in the Skylab program, NASA's first manned space station.

The Skylab orbital workshop will be launched by a Saturn V from KSC's Complex 39 in 1973. The next day, three astronauts will be launched by the smaller Saturn IB rocket to rendezvous and dock with the workshop and spend as long as 28 days on board. Two more revisits are planned, with the astronaut crews spending as long as 56 days in the station performing a variety of scientific and applications experiments.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

SEP 8 1971

RELEASE NO: KSC-211-71
FOR RELEASE: September 7, 1971

MAXIMUM BENEFIT SOUGHT FROM EQUIPMENT, STRUCTURES AT NASA'S LAUNCH COMPLEXES 34-37

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center (KSC) and General Services Administration (GSA) are combining efforts to get maximum utilization from structures and equipment at NASA's Launch Complexes 34 and 37 (LC-34/37) on Cape Kennedy that are no longer in use.

The decision to dismantle the two complexes came after it was decided to conduct all future manned launches from Launch Complex 39 at KSC. LC-34/37 had been used as launch sites for 15 Saturn 1 and Saturn IB launches, including the liftoff of Apollo 7, the first manned flight of the Apollo series.

The total estimated acquisition value of the two complexes and related industrial property is $142,579,826. This includes $105,384,586 for the complexes and $37,195,240 for the industrial property that was installed.

To date, some $39,970,757 of the structures and equipment has been reutilized. The breakdown of this total is $22,720,951 for equipment and $17,199,806 for structures.

George Harrington, Chief of the Logistics Division of Installation Support at KSC, said an estimated $85 million worth of equipment and structures at the two complexes has been turned over to GSA for utilization screening by other Government agencies. When all agencies have completed this screening, the remaining equipment and structures will be sold. Only $140,000 worth of equipment has been sold to date.

Harrington said on-going NASA programs had first preference on reutilization of the equipment before the structures and equipment were declared available for other screening.

For the Skylab Program, these Centers received the following amounts in equipment values: KSC $5,591,478; Marshall Space Flight Center, $5,558,127; and Lewis Research Center, $446,866.

Additionally, $3,693,593 in equipment is being utilized by KSC's Unmanned Launch Operations for the Viking Program at Launch Complex 41 and other unmanned programs. The blockhouses and peripheral equipment on Pads 34 and 37 are being taken over by KSC Public Affairs for tour stop purposes.

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Approximately $90,000 worth of equipment is being set aside for use in the proposed Space Information and Education Center.

In completing the NASA screening, an additional $3,397,182 is being reutilized at KSC and $1,026,060 at other NASA Centers for miscellaneous programs. At this point, screening has just begun with other Federal agencies. $57,054 worth of equipment has been utilized, leaving a balance of $30 to $40 million worth of equipment to be screened by GSA for Government organizations.

Jack Almand, Chief of the Personal Property Division, GSA, in Atlanta, said considerable interest in equipment at LC-34/37 is being shown by the Atomic Energy Commission, Departments of Defense, Commerce, Interior and Agriculture, Corps of Engineers, and universities involved in research grants administered by Federal agencies.

"In addition," he said, "we are working with the regional coordinators of Health, Education and Welfare (HEW) and its donation program to educational organizations in the Southeastern Region, as well as other regions throughout the country."

"Educational institutions constitute a large portion of the HEW program recipients," Harrington said. "Although much of the equipment is not suited for commercial applications, it can be used in fostering and enhancing the universities' educational programs."

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VAL
news release

RELEASE NO: KSC-212-71
FOR RELEASE: September 8, 1971

TWO AIR FORCE OFFICERS JOIN KSC SHUTTLE GROUP IN LIAISON CAPACITY

KENNEDY SPACE CENTER, Fla.--Two U.S. Air Force officers are helping KSC engineers plan Space Shuttle facilities and formulate flight operations.

The officers, Lieutenant Colonels Carlos Fox and Bob Mosley, joined KSC's Space Shuttle Task Group last month in a liaison capacity between the Air Force and the Space Agency.

In addition to combining Air Force Shuttle requirements with NASA planning, they will be contributing their expertise to the local effort.

Sam Beddingfield, KSC Space Shuttle Task Group Manager, said he was happy to have "men of their quality on board," and foresees plans of mutual benefit to the Air Force and NASA.

They are attached to Space and Missile Systems Organization in Los Angeles (SAMSO). Fox and Mosley have SAMSO counterparts associated with the Space Shuttle program at the Manned Spacecraft Center and the Marshall Space Flight Center.

Fox noted that the Air Force particularly is interested in the Shuttle's capabilities for payload handling, satellite retrieval, earth resources, security and space communications.

He said the versatile vehicle will be able to carry an upper stage which could be converted into either a manned or unmanned spacecraft for deep space probes.

Working with KSC's Jim Spears, Fox is concerned mainly with Shuttle design engineering and ground handling logistics.

Mosley will concentrate on Shuttle booster flight stability and control tests and will work closely with KSC counterparts Preston Beck and Jim Hart.

Mosley is a graduate of the Air Force Experimental Test Pilot School and has logged 12,000 flying hours.

Both Mosley and Fox are command pilots and veterans of World War II, Korea and Vietnam.

They live in Satellite Beach with their families.

NASA/KSC SEPT/71

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

SEP 9 1971

RELEASE NO: KSC-213-71
FOR RELEASE: September 8, 1971

DR. KURT H. DEBUS TO GIVE KEYNOTE ADDRESS AT KSC COMBINED FEDERAL CAMPAIGN RALLY

KENNEDY SPACE CENTER, Fla.--Center Director Dr. Kurt H. Debus will kick off the 1972 KSC Combined Federal Campaign rally at 1:00 p.m. Monday with a keynote address in the Training Auditorium.

Dr. Debus has urged KSC management personnel and those working in the campaign to attend the rally to gain a better understanding of the objectives and needs of the cummunity and national organizations that will receive the funds. A training session will follow the speech.

Doug Black, Chairman of the KSC drive, said a goal of $85,000 has been established, based on the salaries of Civil Service personnel at the Spaceport. Last year, $82,250 was collected.

Black said 78 per cent of the funds will go to the United Fund of Brevard County, 16 per cent to National Health Agencies and six per cent to International Service Agencies.

All designated funds will be credited toward the campaign goal of the appropriate voluntary group and undesignated funds will be added to each group's designated funds as necessary to achieve the group's goal.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SEP 23 1971

news release

RELEASE NO: KSC-217-71
FOR RELEASE: September 21,1971

APOLLO 15 ASTRONAUTS RETURN TO SPACEPORT SEPTEMBER 29

KENNEDY SPACE CENTER, Fla.--Apollo 15 astronauts David Scott, Alfred Worden and James Irwin will return to the Kennedy Space Center September 29 to meet with the Government-industry team that launched them on their scientific lunar landing mission.

After greeting Scott, Worden and Irwin at the Manned Spacecraft Operations Building at 9:15 a.m., Center Director Dr. Kurt H. Debus will escort them to the Vehicle Assembly Building for a welcome ceremony to which all Center Government and contractor personnel, community guests and a Brevard County school group are invited.

The ceremony, scheduled to begin at 9:30 a.m., will open with the playing of the National Anthem by the Air University Band of Maxwell Air Force Base, Alabama.

The program will include a welcome by Dr. Debus, followed by comments on the mission by each crew member. Scott, Worden and Irwin will be presented mementos of the historic launch by Dr. Debus and Launch Operations Director Walter Kapryan.

Following the ceremony the crew will return to the MSOB where they will be guests of honor at a luncheon hosted by Dr. Debus in the Mission Briefing Room. They will depart KSC later in the day.

Since completion of post-mission debriefings the Apollo 15 crew members have fulfilled engagements throughout the country. They addressed a joint session of Congress early this month.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SEP 23 1971

news release

RELEASE NO: KSC-218-71
FOR RELEASE: September 22, 1971

APOLLO 16 PREPARATIONS ON SCHEDULE AT KSC

KENNEDY SPACE CENTER, Fla.--Apollo 16 preparations at the Kennedy Space Center continue on schedule as the command-service and lunar modules undergo tests in preparation for manned altitude chamber runs in October.

The Apollo 16 first stage, S-IC 5II, arrived September 17 after a five-day trip by barge from the Marshall Space Flight Center's Michoud Assembly Facility in New Orleans. The stage was originally scheduled to arrive at KSC earlier and was to be erected September 9, but rehabilitation of the roadway over which it was transported to the barge at Michoud forced a delay in shipment. The stage was erected in Vehicle Assembly Building High Bay 3 on September 21.

The second stage, already on hand, will be stacked October 1 and the third stage, also stored in the VAB, will be stacked October 5.

The instrument unit is scheduled to arrive from Huntsville via Guppy aircraft September 28. It will be erected atop the third stage October 6.

Supercritical helium tests, environmental control system tests, quick disconnect tests involving the ascent and descent stages, gaseous oxygen pressurization tests and decay tests have been completed on the LM in preparation for manned sea level altitude chamber runs on October 5 and 6.

An unmanned altitude chamber run with the chamber depressurized is scheduled October 13. Manned altitude runs are scheduled with prime crew members Commander John Young and Lunar Module Pilot Charles Duke on October 15, and backup crew members Commander Fred Haise and Lunar Module Pilot Edgar Mitchell on October 19.

The CSM integrated systems test in preparation for altitude chamber runs has been completed and experiment packages have been removed from the Scientific Instrument Module (SIM) bay and returned to developers for final modifications. The experiment packages will be reinstalled following completion of altitude chamber runs.

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An unmanned CSM altitude chamber run is scheduled October 14. Young, Mitchell and Apollo 16 CM Pilot Thomas Mattingly are scheduled for a CM altitude chamber run October 20. The backup crew, Haise, Mitchell and CM Pilot Stuart Roosa, are scheduled for a CM altitude run October 23.

Astronauts Young and Duke will spend a record 73 hours on the lunar surface, six more than previously planned. The additional time on the lunar surface will be spent inside the LM for study, rest, sleep, eating and preparation for extravehicular activity.

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ARCH00005917

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

SEP 23 1971

RELEASE NO: KSC-219-71
FOR RELEASE: September 22,1971

KSC MAKES MEASUREMENT SYSTEM AVAILABLE TO UNIVERSITY OF FLORIDA

KENNEDY SPACE CENTER, Fla.--The Spaceport is making available to the University of Florida its Particle Measurement Computer System to analyze samples of the upper air taken by plane at various elevations.

Ed Perkins, employed in Support Operations' Materials Control Branch here, said the measurement system is the only one of its kind in Florida and perhaps in the Southeast.

The samples are collected by air blowing into the open end of an aerosol instrument which is fitted with a fine filter, about 47 millimeters in diameter. After sampling, the filter is protected from ground level contamination and brought to the laboratory.

At the Prototype Lab, the filter is placed on a glass slide on the measurement system, and in some cases is made transparent by immerging it in oil of the same refractive index as the filter, making it invisible to the eye when under magnification.

In this mode, the powerful light source of the microscope is placed under the sample and the particles are viewed as light passes through the filter. The particles stand out as if suspended.

The most common method of particle counting is to view the particles by reflected light.

The microscope, with a range from 40 to 1,000 power, scans a small portion of the filter, which may be seen through the binocular eye pieces of the scope.

A television camera attached to the microscope sends an image to an 11-inch screen.

The computer, separate from the microscope and TV screen, instantly counts the particles according to micron size and displays the size and number on the screen as well as in storage registers of the computer. Counting and sizing of particles by transmitted light can be done manually, but the process is tedious and time consuming.

-more-

Also, the computer can interrogate and store the data from the entire filter in a matter of minutes.

Microns are a standard of measurement used in classifying particles. Fifty microns is barely visible to the naked eye, and 25,400 microns side by side would be equal to one inch. Cleanliness standards in the aerospace industry run as low as five microns.

The air pollution study at the University of Florida is in conjunction with the State of Florida, and is part of a larger project involving the following agencies: NASA, National Oceanic and Atmospheric Administration, Florida Department of Air and Water Pollution; Department of Transportation and Federal and state meterologists.

At KSC, the Materials Control Branch, headed by Charlie Hoppesch, is under the Analytical Laboraties Division, led by Dr. J.B. Gayle. This division is one of the elements in Support Operations, Directed by Robert E. Gorman.

Dr. E. S. Green, Graduate Research Professior in Aeronomy, Department of Physics and Astronomy, and J. W. Schwartz, Technical Coordinator, both of the University of Florida, are in charge of the project for the university.

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ARCH00005919

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SEP 23 1971

news release

RELEASE NO: KSC-220-71
FOR RELEASE: September 22, 1971

TURNER APOLLO 16 TEST SUPERVISOR

KENNEDY SPACE CENTER, Fla.--Gordon Turner, after serving as a Test Supervisor on each manned mission since Apollo 8, has achieved one of his major goals.

He has been selected as the Lead Test Supervisor for Apollo 16.

In his new role, Turner will coordinate the efforts of five other Test Supervisors who oversee key operations in Firing Room 1 of the LCC.

"I am real pleased to serve as Lead Test Supervisor for the first time," Turner said. "The challenge of assuming new responsibilities is proving very stimulating."

He said that he is confident that Apollo 16, scheduled for launch March 17, will "go as planned."

Working with Turner on Apollo 16 will be Test Supervisors Charles Henschel, Arthur Franklin, Ronald Bennti, Richard Thornburg, William Schick and Karl Striby.

Turner, in turn, reports to Paul Donnelly, Associate Director for Operations in Launch Operations, on operational matters and to Don E. Phillips, Chief Test Supervisor who directs the Test Operations Office at the LCC, on administrative functions.

Around-the-clock responsibilities of Test Supervisors include monitoring and coordinating the activities of spacecraft and launch vehicle test conductors, test support controllers, flight controllers, Manned Spacecraft Network supervisors, mission safety and security forces and range officials.

After the successful launch of Apollo 16, Turner said he will enjoy a long period of uninterrupted sleep and then a vacation to pursue his hobby of undersea movie photography.

The months-long pressure of meeting launch objectives is great for the Lead Test Supervisor, who averages only about six hours of sleep during each of the last ten days prior to launch and not much more for weeks before that.

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Turner has already selected the place he will visit after the launch of Apollo 16 -- off the Mexican coast near the Yucatan Peninsula.

A native of Conneaut, Ohio, Turner was graduated from Ohio State University in 1961 with a degree in Electrical Engineering.

After two years with the Martin Company at Cape Kennedy on the Pershing missile project, he entered the Government work force in 1963. His first assignment was with the Electrical Systems Group of the Manned Spacecraft Center operating at the Cape.

He was assigned later to KSC as a spacecraft test conductor. His first assignment was on AS-201, the first Apollo mission with an unmanned spacecraft that was launched in 1966 from Launch Complex 34 using a Saturn 1B.

Beginning with Apollo 8, launched December 21, 1968, Turner was assigned as a space vehicle test supervisor for Apollo missions.

Looking beyond the last two Apollo missions, Turner hopes to get similar assignments in the Skylab Program.

Turner, a bachelor who resides on Merritt Island, also is making long-range plans for undersea photographic excursions.

# # #

KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RELEASE NO: KSC-221-71
FOR RELEASE: September 23, 1971

NEW SPACEPORT RADAR INSTRUMENT TO AID WEATHER FORECASTING CAPABILITY

KENNEDY SPACE CENTER, Fla.--An improved weather forecasting capability at KSC is expected as a result of the purchase of a new weather radar instrument, scheduled for installation prior to the launch of Apollo 16 next March.

Enterprise Electronics Corporation, Enterprise, Alabama, received a $83,484.51 contract to provide the radar for installation at Complex 39.

Designed to penetrate clouds to measure height and extent of vertical development of cells in thunderheads, the radar and antenna will be installed at Weather Station B, west of the Kennedy Parkway to the north of the Vehicle Assembly Building.

The display and control console, connected with the antenna site by land lines, will be located in the KSC Weather Office in the Manned Spacecraft Operations Building.

"Determination of cloud buildups and the amount of precipitation in clouds is important in forecasting thunderstorm activity," said Ernest Amman, KSC Staff Meteorologist. "The new radar will give us the capability of watching clouds grow both vertically and horizontally.

"At Complex 39 we are interested in what is building up overhead and in the immediate area rather than in what is occurring 20 miles away."

Studies are underway on the feasibility of installing the dish antenna, which will scan to distances of 200,000 feet horizontally and 50,000 feet vertically, in the presently unoccupied RAWIN (Wind Tracking Radar) dome atop Weather Station B.

The antenna will scan horizontally at speeds from one revolution per 20 minutes to five revolutions per minute. It can also be rotated manually.

The antenna will also rotate 360 degrees vertically, with radiation shut off during the 180 degree segment below the horizon. Vertical rotation speed will be 5 rpm.

Operating at 120 kolowatts peak output with a 1.8 degree beam width, the antenna will scan a 300-foot cloud section at 10,000 feet.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-222-71
FOR RELEASE: September 24, 1971

KSC 'RECORDS ROUNDUP' PLANNED IN OCTOBER

KENNEDY SPACE CENTER, Fla.--The annual "Records Roundup" at KSC, a Center-wide effort to reduce the amount of inactive records and other unessential materials from files, will be conducted during October.

Jim Craig, KSC Records Management Officer, said the drive to reduce unneeded records applies to papers held by NASA and to NASA-owned records that were generated or maintained by on-site contractors since November 1, 1970.

"Clearing file cabinets," Craig said, "makes them available for reuse and prevents having to purchase new ones.

"If we had to keep all the records from last year that were destroyed, it would have required an additional 2,098 file cabinets. At approximately $55 each, this totals $115,390.

"In addition, space and maintenance costs would have been $59,171, plus another $5,920 for records that were retired. This comes to a total of $180,481 in costs avoided."

Following the October Records Roundup, KSC will submit an annual report to NASA Headquarters on the outcome.

"Records coordinators are requested to contact their people and disseminate the proper forms for use in the roundup," Craig said. "After the forms have been completed, the coordinators should consolidate the figures and turn in his report."

He said each individual office should purge the files of all nonessential papers and record what it throws away on the forms provided by the coordinator. Also, each office will be required to estimate what it has disposed of since last November 1.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SEP 30 1971

news release

RELEASE NO: KSC-225-71
FOR RELEASE: September 30, 1971

SKYLAB MANPOWER

KENNEDY SPACE CENTER, Fla.--The Center's manpower will increase slightly during 1972 as preparations continue for launching the first U. S. experimental space station, Skylab, in 1973.

The Skylab program requires three subsequent manned launches of astronaut crews who will visit the station in orbit for periods of one to two months during a cycle of eight months.

McDonnell Douglas is NASA's prime contractor for the orbital workshop which is being fabricated and equipped in California. Martin Marietta provides the multiple docking adapter and some experiments.

Some of the KSC contractors directly involved in Skylab systems checkout and launch will require additional personnel for the duration of that program. The last Skylab launch in the present schedule would occur late in 1973.

Other personnel reductions in the 1972-3 time frame will hold the net manpower increase at KSC to approximately 500.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-226-71
FOR RELEASE: October 4, 1971
3:00 p.m.

CHRYSLER SKYLAB EXTENSION

KENNEDY SPACE CENTER, Fla.--The NASA Kennedy Space Center has negotiated an $11,640,773 contract extension with the Chrysler Corp., New Orleans, LA, for launch operations support in the Skylab program.

The modification extends the present contract from October 1, 1971 through June 30, 1973, and increases the total value of the cost-plus-fixed-fee contract to $25,016,708.

Chrysler Corp. is the prime contractor for the Saturn IB launch vehicle. The contract extension covers a follow-on effort of the launch support required for the first stage of the Saturn IB.

Three launches of the Saturn IB and Apollo spacecraft are planned in the program carrying three-man astronaut crews to the Skylab space station, starting in 1973. The workshop will first be launched into orbit by the larger Saturn V rocket.

The first crew will spend up to 28 days aboard the workshop performing a variety of scientific, medical and applications experiments. The latter two missions may have a duration of up to 56 days.

The Skylab launches will take place at KSC's Launch Complex 39. Modifications have been made to one of the Saturn V mobile launchers to accomodate the smaller Saturn IB rocket on a pedestal.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCT 6 1971

news release

RELEASE NO: KSC-227-71
FOR RELEASE: 3:00 P.M.
October 5, 1971

SPACEPORT AWARDS CONTRACT EXTENSION TO BENDIX CORPORATION

KENNEDY SPACE CENTER, Fla.--The NASA Kennedy Space Center has negotiated a $33,157,979 contract extension with the Bendix Corp. to provide launch support services for the Apollo and Skylab programs at the Spaceport.

The extension to Bendix' Launch Support Division increases the amount of the basic cost-plus-fixed-fee contract to $210,081,335 and covers work to be performed between October 1, 1971 through December 31, 1972.

Bendix Corp. performs a variety of launch support functions for NASA at KSC and the Air Force Eastern Test Range including: Operation and maintenance of Complex 39, the Saturn V mobile launchers, service structure and industrial complexes; propellant and life support facilities; systems safety; test support management, requirements and operations; reliability and quality assurance and other related services.

Two more Apollo manned lunar landing missions (Apollos 16 and 17) are scheduled at KSC before the Skylab manned space station program begins in 1973. In Skylab, an orbital workshop will be launched by a Saturn V rocket, followed the next day by the launch of a three-man astronaut crew to man the station and perform a variety of scientific and applications experiments for a period of up to 28 days. Two more manned missions are planned with the stay-time extended to as much as 56 days.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCT 7 1971

RELEASE NO: KSC-228-71
FOR RELEASE: October 5, 1971

HOLLOWAY CORPORATION AWARDED $615,000 CONTRACT AT SPACEPORT

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center has awarded a $615,000 construction contract to the Holloway Corporation of Titusville, Fla.

The contract, which extends from September 23, 1971 through June 16, 1972, calls for Holloway to furnish all labor, materials, equipment and transportation in constructing a clean room in the Manned Spacecraft Operations Building at KSC.

The clean room will be a laminar flow-type facility in which air is constantly recirculated through a filter to remove tiny dust particles and other unwanted matter.

The facility is being built to accommodate checkout of the Apollo Telescope Mount (ATM) to be used in the Skylab Program in 1973. The ATM, which will be used to make extensive studies of the Sun during the three missions, has sensitive optical surfaces that must be protected against contaminants.

KSC is the National Aeronautics and Space Administration's launch organization for manned and unmanned launches in Florida and for NASA's unmanned space flights out of the Western Test Range in California.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCT 7 1971

news release

RELEASE NO: KSC-229-71
FOR RELEASE: October 5, 1971

KSC UTILITIES PROGRAM CUTS LIGHT BILL BY $75,000

KENNEDY SPACE CENTER, Fla.-- A Utilities Conservation Program at the Kennedy Space Center has resulted in a $75,000 reduction in the annual power bill for the Manned Spacecraft Operations Building and the Vehicle Assembly Building.

R. C. Daley, Chief of Plant Engineering and Maintenance Division of Installation Support, said this savings was accomplished by "good planning and a team effort of Launch Operations and Installation Support which resulted in turning off High Bay lighting in the MSO Building and the VAB.

"The two organizations received help from contractors, fire, security and safety personnel."

He said that KSC management had placed emphasis on reducing utility costs and cited the efforts of Nox Wiley, Spacecraft Operations; Don E. Phillips, Associate Director of the Operations Office, Launch Operations; and the Boeing Company for their parts in achieving the cost savings.

Following a charter to conserve fuel from President Nixon to heads of federal agencies in October, 1970, Center Director Dr. Kurt H. Debus asked organizational directors at KSC to reduce utility consumption wherever possible and consistent with mission requirements.

The Plant Engineering and Maintenance Division has established goals in conservation of water, fuel, and electricity at the Spaceport.

Other reduction in costs also have been realized, Daley said, by cutting in half the illumination in parking lots, reducing lighting in office areas when operationally feasible, tighter control on comfort air conditioning when areas are not in use, and reduced temperatures in water heating plants.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCT 7 1971

RELEASE NO: KSC-232-71
FOR RELEASE: October 6, 1971

5 KSC EMPLOYEES RECEIVE GRADUATE PROGRAM AWARDS

KENNEDY SPACE CENTER, Fla.--Five KSC Civil Service employees have been named recipients of long-term graduate program awards and are pursuing Master and Doctorate degrees.

The employees and their places of residence, organizations, degree programs and universities are as follows:

N. R. Wirman, Cocoa, Apollo-Skylab Programs, Master of Science in Systems Management Degree Program, University of Southern California.

Charles V. Horne, Titusville, Launch Vehicle Operations, Doctorate of Business Administration (Management) Degree Program, Louisiana Tech University.

Donald D. Lovall, Rockledge, Information Systems, Doctorate in Engineering Degree Program, University of Florida.

James W. Greenwood, Titusville, Launch Vehicle Operations, Doctorate in Business Administration, Florida State University; and

James A. Kelley, Indian Harbour Beach, Launch Vehicle Operations, Doctorate in Business Administration, Florida State University.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCT 7 1971

RELEASE NO: KSC-233-71
FOR RELEASE: October 6, 1971

KOENIG NAMED ENVIRONMENTAL HEALTH OFFICER AT SPACEPORT

KENNEDY SPACE CENTER, Fla.--Nat Koenig, formerly employed in the NASA Test Support Office in KSC's Technical Support, has been named Environmental Health Officer at the Spaceport.

Koenig, who resides in Satellite Beach, reports to Dr. Alan C. Harter, Chief of the Medical Services Office under Frederic H. Miller, Director of Installation Support.

While administering the overall KSC Environmental Health Program, Koenig also is the official KSC Radiation Protection Officer and provides technical direction to and monitors the performance of the medical contractor as related to environmental health.

During all launches involving nuclear elements, Koenig will be in charge of the Radiological Control Center. Also, he serves as Executive Secretary of the KSC Radiological and Isotope Committee, which authorizes procurement and use of radioactive materials at the Spaceport.

He is responsible for technical monitoring of the potable water supply, sewage treatment and disposal, treatment and disposal of industrial wastes, solid waste management and disposal, and selection and use of pesticides.

During prelaunch checkout, launch and post launch operations, Koenig is responsible for assuring that adequate environmental health support is provided to stage and spacecraft organizations in such matters as oxygen monitoring, atmospheric sampling for toxic materials, hazardous noise evaluation, radiation control and protection, and spacecraft water analysis.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCT 7 1971

RELEASE NO: KSC-234-71
FOR RELEASE: October 6, 1971

OSO OBSERVING SOLAR ACTIVITY

The initial turn-on of experiments in the Orbiting Solar Observatory-7 (OSO-7) scientific satellite has resulted, for the first time, in X-Ray observations of the beginning of a solar flare and the first solar "streamers" (mysterious rays in the faint outermost layer of the solar atmosphere) photographed by a spacecraft.

Scientists at the Naval Research Laboratory, Washington, D.C., and at NASA's Goddard Space Flight Center, Greenbelt, Md., consider these two observations most important. All six of the spacecraft's experiments have now been turned on and are operating.

The X-Ray and Extreme Ultraviolet Spectroheliograph experiment, a GSFC experiment, detected the start of a Class 2 or very large solar flare almost immediately after it was turned on and pointed at a particularly active region on the solar surface.

Scientists say this observation will lead to a level of understanding of solar flares that was not possible before now. Solar flares have many direct effects on Earth's environment, weather, and communications. They compared previous flare studies as being similar to trying to determine the cause of automobile collisions by only hearing the sound and seeing the damage, while the OSO-7 observation may be compared with watching the two cars come together in a crash.

The Naval Research Laboratory (NRL) White Light and Extreme Ultraviolet Coronagraph experiment was activated and transmitted its first picture which showed several streamers.

Before OSO-7 the only pictures of streamers were obtained during solar eclipses and occasionally by sounding rockets which can only take short glimpses. OSO can take them several times every day for months and observe their behavior. The experiment creates its own artificial eclipse by utilizing an occulting disc on a boom extending in front of the observatory.

The goal of the NRL experiment is to further the understanding of how active solar regions affect the corona, their role in heating it to millions of degrees, their relation to the streamers, and the effects on Earth.

The successful turn-on of the experiment and receipt of initial data followed a successful eight-hour effort Wednesday, Sept. 29, to save the spacecraft after it was tumbling in an egg-shaped rather than the planned circular orbit. The rescue resulted from the transmission of 2,352 commands to the spacecraft by ground controllers using pre-launch contingency plans.

KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCT 8 1971

news release

To: STDL-ID

RELEASE NO: KSC-231-71
FOR RELEASE: October 7, 1971

KENNEDY SPACE CENTER EMPLOYEES RECEIVE APOLLO 15 AWARDS

KENNEDY SPACE CENTER, Fla.--Four Kennedy Space Center employees received NASA Exceptional Service Medals and one accepted a Group Achievement Award at a NASA Apollo 15 award ceremony at the Manned Spacecraft Center, Houston, Texas, October 5.

Receiving Exceptional Service Medals for their contributions to the success of the Apollo 15 mission were James F. Harrington, III, Satellite Beach, who was test supervisor for the launch of Apollo 15; Norman M. Carlson, Titusville, who was launch vehicle test conductor for the launch; Theodore P. Hershey, Cocoa Beach, who supervised the collection and reduction of telemetric data and operation of the television data display system during checkout and launch; and Robert B. Sieck, Titusville, who was NASA test team leader for the checkout of the Apollo 15 command and service modules.

Accepting a NASA Group Achievement Award for the National Oceanic and Atmospheric Administration Group at KSC for effective weather forecasting during the checkout and launch of Apollo 15, was Ernest A. Amman, Cocoa Beach, KSC staff meteorologist.

Raymond L. Clark, Director of Technical Support, accompanied the honorees and their wives and represented Center Director Dr. Kurt H. Debus at the ceremony.

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KSC
KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

OCT 8 1971

To: STDL-D

RELEASE NO: KSC-235-71
FOR RELEASE: October 7, 1971, 2 p.m.

SPACE SHUTTLE STUDIES EXTENDED

The National Aeronautics and Space Administration is extending by six months its study contracts on the Space Shuttle with four industrial teams to explore in detail various alternatives resulting from the current studies.

Present study contracts with teams headed by North American Rockwell Corp., McDonnell Douglas Corp., Lockheed Missiles and Space Co., and the Grumman Aerospace Corp. will be extended until April 30, 1972.

Selection of sites for Shuttle development and operational flights will be deferred until overall systems characteristics are defined.

# # #

KSC

KENNEDY SPACE CENTER, FLORIDA 32899

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

news release

RELEASE NO: KSC-245-71

FOR RELEASE: October 19, 1971

UNIVERSITY OF FLORIDA AWARDED $99,189 CONTRACT FOR APOLLO LAUNCH FACILITIES AND OPERATIONS HISTORY

KENNEDY SPACE CENTER, Fla.--The Kennedy Space Center has awarded a $99,189.00 history contract to the University of Florida.

The contract, which extends over a 24-month period with an option to extend for a period of six months, provides for research and preparation of a narrative history of Kennedy Space Center Apollo launch facilities and operations.

University of Florida historians are scheduled to commence work in an office at the Spaceport by November 1.

Heading the University of Florida team will be Milton Lomask, assisted by Dr. Charles Benson.

Lomask, a graduate of the University of Iowa, received his MA degree at Northwestern University. A former newspaperman, he instructed at Catholic University and New York University, and is the author of a number of historical manuscripts. He is co-author of "Vanguard," a history of the early U.S. space project, which recently won the American Institute of Aerospace and Astronautics history manuscript award.

Dr. Benson received his BA degree at Davidson College, his MA degree at Johns Hopkins University and his PhD. at the University of Florida. He is at present an instructor at Daytona Beach Community College.

Others, in addition to the University of Florida, submitting proposals for the history contract were Florida State University, Jacksonville University and the University of South Florida.

The Kennedy Space Center is the National Aeronautics and Space Administration's launch organization for manned and unmanned launches in Florida and for unmanned launches at the Western Test Range in California.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RELEASE NO: KSC-243-71

FOR RELEASE: October 19, 1971

KENNEDY SPACE CENTER ENGINEER DESIGNS AUDIO METER AS DEAF COMMUNICATION AID

KENNEDY SPACE CENTER, Fla.--A potential solution to a problem encountered by deaf persons resulted from a concept provided by KSC engineer Clyde Pittman in response to a public sector problem identified by NASA's Technology Utilization Program.

A common problem encountered by deaf persons in oral communication with persons with normal hearing is voice level. Unable to hear his own voice the deaf person frequently speaks too loudly, or unintelligibly low.

Need for a solution was the subject of a problem statement circulated by TU's Biomedical Applications Team at Southwest Research Institute, San Antonio, Texas, a NASA contractor involved in identifying problems that may be solved through application of space technology and making solutions available for the benefit of mankind.

Receiving the problem statement, the KSC TU office circulated it to engineering areas involved in communications, among them Design Engineering's Communications Branch, where chief Albert Kempson assigned a study of the problem to Pittman.

Pittman's concept provided for a battery operated wrist watch-type device containing microphone, amplifier, potentiometer and meter. Observing the meter as he speaks to others, the deaf person would maintain voice level within calibrated ranges. The solution included identification of components and a schematic.

Submitted by Kempson to the KSC TU office, the concept was forwarded to Southwest Research for review by the biomedical team. So interested was the team in the concept that a prototype device will be fabricated and tested in communications situations involving the deaf.

"We feel that Mr. Pittman's suggestions will be of particular help in solving the problem and ... will keep in touch with him from time to time on guidance," wrote Dr. David F. Cluelasure, Southwest's Biomedical Applications Program project manager.

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Born in Yokuska, Japan, Pittman has resided in Brevard County since 1954.

A graduate of Titusville High School, he attended the University of Florida where he received a BS degree in Electrical Engineering. As an undergraduate at Florida he was a member of the University's engineering staff, involved in pollution control experiments and theoretical physics research under direction of physics and aeronomy head Dr. Alex E. S. Green.

He was employed by McDonnell Douglas during two summer periods, working on XM-47 Dragon missile design.

Single, Pittman resides with his parents, Mr. and Mrs. John W. Pittman, in Mims, Florida.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RELEASE NO: KSC-244-71

FOR RELEASE: October 20, 1971

KSC DEPUTY DIRECTOR TO ADDRESS UN GROUP MEETING IN PUERTO RICO

KENNEDY SPACE CENTER, Fla.--Miles Ross, Deputy Director of the Kennedy Space Center, has been invited to deliver the principal address at the annual meeting October 22 of the United Nations Association of the United States of American in San Juan, Puerto Rico.

Invited by Puerto Rico Chapter President Julian O. McConnie, Jr., Ross will speak on " Space Exploration and Technology and its Contributions to World Progress."

Before departing, Ross noted that "Space" offers a means of communication among nations, promoting mechanisms of world understanding.

He said that the outstanding progress in Puerto Rico economically, politically and socially provides an excellent background for discussion of space programs.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCT 22 1971

RELEASE NO: KSC-246-71
FOR RELEASE: October 20, 1971

TELEPROCESSING UNITS SPEED SUPPLY SYSTEM AT SPACEPORT

KENNEDY SPACE CENTER, Fla.--New remote teleprocessing units at six service centers have improved flexibility and reduced costs in the Kennedy Space Center's computerized and automated supply system.

The new units, IBM 2740s, are used in conjunction with a high-speed computer and automation of certain functions to give workers at various locations quick access to over 52,000 items of supply.

Backbone of the system is a third generation IBM 360/50 real-time computer located in the Central Instrumentation Facility. Tied into the computer are the IBM 2740s plus other types of teleprocessing units in the main supply building.

By using a keyboard input, the 2740s can handle document control numbers, customer names, room and building numbers and other pertinent data, all of which have improved flexibility over previous units. Annual rental charges for the new units are significantly lower than for units replaced.

A key link in the supply system is an IBM 1053 teleprocesser in the main warehouse. This unit produces issue authorizations which are separated by priority, then forwarded to the proper storage area where the requested items are "pulled" by warehouse personnel..

To further speed supply action, automated vehicles are guided throughout warehouses by remote control to pick up and deliver items to a central station. Moving from point to point with red lights flashing and bells ringing, the unmanned vehicles invariably amaze visitors seeing them for the first time. Control of the vehicles is effected through cable buried in the flooring.

The speed, accuracy and convenience of the computerized and automated supply system benefit both the individual user and supply managers.

For the user, his needs are met with a minimum of paperwork and delay. An employee in the Vehicle Assembly Building, for example, identifies a requirement to his supply service center. If the item is not in stock there, the requirement is fed into the IBM 2740, which transmits it to the IBM 360/50 computer.

Within a few moments, a response is received. If the item is available on the Spaceport, it will be delivered to the supply service center or to the employee's work area. If the item is not available, information on when it can be expected is transmitted.

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For supply managers, the computer monitors requirements, analyzes inventories in relationship to projected usage and prepares replenishment actions.

Supply actions accomplished by computer include receipt, issue, replenishment, adjustment, transfer, turn in, due out, inquiry and record maintenance.

Over 52,000 supply items are managed by the Supply Branch in the Logistics Division of KSC's Installations Support Directorate. Hub of the operation is the Central Supply complex located in the southwest section of the Industrial Area.

Items available in warehouses range from paper clips to delicate launch-critical components. Many KSC supply requirements are obtained from other Government supply agencies around the country which are linked by transceiver to Central Supply. Other requirements are obtained from commercial sources through KSC procurement channels.

Frederick H. Miller is the Director of Installation Support and George E. Harrington is Chief of the Logistics Division.

Guiding the day to day operations of the Supply Branch is W. N. McClintock, who has been associated with the supply system of KSC and its predecessor organizations since 1961.

McClintock said that meeting the varied supply needs of the Spaceport would be a slow, tedious process without automation and computers.

"The analyses, decisions and actions required to complete some 50,000 supply transactions each month would be physically impossible to handle manually without a tremendous increase in personnel, "McClintock states.

The supply system is operated by the Boeing Company under the technical guidance of McClintock and his staff. Federal Electric Corporation operates the IBM 360/50, with Boeing operating the remote teleprocessing units.

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KSC news release

KENNEDY SPACE CENTER, FLORIDA 32899
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RELEASE NO: KSC-248-71
FOR RELEASE: October 29, 1971

FIVE FROM SPACEPORT RECEIVE NASA AWARDS

KENNEDY SPACE CENTER, Fla.--Five members of the Kennedy Space Center team were presented the NASA Exceptional Service Medal -- one of the space agency's highest citations -- during the Annual Awards Ceremony in Washington, D.C., on Friday, October 29.

A total of 76 employees agency-wide received awards from NASA Administrator Dr. James C. Fletcher during the ceremonies marking NASA's 13th anniversary.

The KSC honorees and their citations:

-- John J. Neilon, Director of Unmanned Launch Operations: "In recognition of his exceptional performance, continuously unique and outstanding contribution to the management of Unmanned Launch Operations at the John F. Kennedy Space Center. His commitment to launch operations of both domestic and international scientific space programs has contributed significantly to man's knowledge of his space environment."

-- John D. Gossett, Centaur Operations Branch, KSC Unmanned Launch Operations: "In recognition of his outstanding contribution to astronomical, application, lunar and planetary missions as Atlas-Centaur Operations Manager at the John F. Kennedy Space Center."

--Hugh A. Weston, Jr., Delta Operations Branch, KSC Unmanned Launch Operations: "In recognition of his exceptional performance as Delta Operations Manager and his contributions to space science, meteorological, communication and and bioscience flight programs at the John F. Kennedy Space Center."

The Unmanned Launch Operations Directorate is responsible for NASA launches of scientific, applications, lunar and planetary flights from Cape Kennedy and the Western Test Range. The Atlas-Centaur rocket has been used for a series of lunar and planetary missions including the Surveyor program and most recently the flight of the Mariner 9 spacecraft to the Planet Mars. Atlas-Centaur also launches the Intelsat IV communications satellites. The workhorse Delta rocket has been launched some 86 times on a variety of satellite missions from both the east and west coasts.

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-- George L. English, Manpower Programs Officer, KSC Administration Directorate: "For significant achievement and service to the John F. Kennedy Space Center, NASA, in the design, implementation and continuing administration of a unique system for manpower management and organization planning, and for major assistance to center management in making important organization and staffing decisions through the periods of major adjustment; and outstanding leadership and initiative in directing the manpower staff while personally accomplishing difficult and sensitive negotiations for Center management."

-- Brig. Gen. Thomas W. Morgan, USAF, former KSC Apollo-Skylab Program Manager, who has returned to active military duty as Vice Commander, Air Force Space and Missiles Systems Organization, Los Angeles: "For exemplary leadership, technical competence and outstanding managerial skills as Manager, Skylab Program at the John F. Kennedy Space Center."

Gen. Morgan's tour at KSC included the peak phase of the Apollo manned lunar exploration program and management of KSC preparations for the Skylab space station program which will be launched in 1973 and visited by three astronaut crews.

Neilon, Gossett, Weston and English are residents of Cocoa Beach.

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DEC 9 1971

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

John W. (Jack) King
305 867-2468

FOR RELEASE:
December 7, 1971
Release No: KSC-263-71

APOLLO 16 SPACECRAFT MOVE TO VAB SCHEDULED WEDNESDAY

KENNEDY SPACE CENTER, Fla.--The Apollo 16 spacecraft modules will be moved to Complex 39 for mating with the Saturn V launch vehicle tomorrow following five months of comprehensive checkout in the Manned Spacecraft Operations Building (MSOB).

The Apollo command, service and lunar modules, housed in a protective fairing called the SLA (Spacecraft-Lunar Module Adapter), will be moved during the pre-dawn hours from the MSOB eight kilometers (five miles) north to the Vehicle Assembly Building where the Saturn V is housed in high bay No. 3.

Rollout of the Apollo 16 space vehicle to Launch Pad A is scheduled to begin at 7:00 a.m. EST on Monday, Dec. 13.

Apollo 16 Astronauts John Young, Thomas Mattingly and Charles Duke participated in many of the preparations while the spacecraft components were in the high bay of the MSOB. These included manned altitude runs with the command and lunar modules as well as simulations with the lunar roving vehicle.

The Apollo 16 mission to the Descartes area of the moon is scheduled for launch from KSC on March 17, 1972.

# # #

NEWS

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

Ben E. McCarty
305 867-2468

FOR RELEASE: Friday,
December 17, 1971
Release # KSC-270-71

TWO MAJOR NASA APPOINTMENTS MADE AT SPACEPORT IN 1971

KENNEDY SPACE CENTER, Fla.--Two major appointments marked National Aeronautics and Space Administration personnel changes at the Kennedy Space Center during the past year.

In June, Robert C. Hock was appointed Manager of Apollo-Skylab Programs. Serving as Deputy Manager from the time the Apollo and Skylab Program Offices were combined in June of 1970, he succeeded Brigadier General Thomas W. Morgan, USAF, who was appointed Vice Commander, Air Force Space and Missiel Systems Organization.

As Manager, Hock is responsible for KSC planning to meet Apollo and Skylab program requirements and serves as the primary point of interface for Apollo and Skylab program functions with the Office of Manned Space Flight and other Manned Space Flight Centers.

He joined NASA in May 1966, as Chief of the KSC Advanced Programs office following his retirement from the Air Force with the rank of Lieutenant Colonel.

Also in June, Edward F. Parry was appointed Deputy Chief Counsel to the Kennedy Space Center.

He serves as Deputy to KSC Chief Counsel John O' Brien.

Parry joined NASA as an attorney in the Office of the Chief Counsel at the Manned Spacecraft Center in April 1962.

# # #

DEC 30 1971

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

Ben E. McCarty
305 867-2468

FOR RELEASE:
December 28, 1971
Release # KSC-277-71

SKYLAB MODULES TO ARRIVE AT SPACEPORT IN SUMMER

KENNEDY SPACE CENTER, Fla.--The five modules which will comprise Skylab, the first United States experimental space station, are scheduled to begin arriving at the Kennedy Space Center (KSC) next summer.

Already on hand is some of the rocket and spacecraft hardware for the four Skylab Program missions planned for 1973.

Hardware in storage includes the S-II second stage for the Skylab 1 mission and the S-IVB second stages for Skylabs 2, 3 and 4. Also stored are the spacecraft lunar module adapters and launch escape systems for Skylabs 2, 3 and 4. The remaining hardware will start to arrive in the second half of 1972.

Skylab will consist of the five modules permanently attached to each other to form a laboratory that houses experiments, crew quarters and systems necessary for its operation.

The modules consist of the orbital workshop (OWS), the airlock module (AM), the multiple docking adapter (MDA), the instrument unit (IU) and the Apollo telescope mount (ATM).

The OWS is the primary in-orbit living and working quarters for the three crews which will visit it over a period of eight months. It is structured from an unfueled S-IVB rocket stage which will occupy the same (third stage) position in the Saturn V launch vehicle that a fueled S-IVB does on an Apollo launch.

The AM is the environmental and electrical control center for Skylab. This module contains the port through which the astronauts egress when performing extravehicular activity. It is attached to the forward end of the OWS and provides structural support to all modules mounted forward of the workshop.

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The MDA provides the docking port for the modified Apollo command service modules launched by Skylabs 2, 3 and 4. The MDA is the control center for the ATM and the Earth resource experiment package (EREP). It is mounted on the forward end of the AM.

The ATM houses a sophisticated solar observatory containing eight electronic telescopes to observe the Sun in the extreme ultraviolet and X-ray regions of its spectrum. Observation of these radiations are not practical from the Earth's surface because of the atmosphere's filtering effect.

The IU contains equipment that will guide the Saturn V launch vehicle from liftoff through separation of Skylab from the second stage. After separation, the IU provides power and sends commands to various Skylab systems which will rotate Skylab 180 degrees, pressurize the station with oxygen and perform other functions during its useful life of 7.5 hours.

A payload shroud (PS) protects the ATM, the MDA and part of the AM during launch and boost to Earth orbit. It is built in four sections to facilitate its jettisoning after orbit insertion.

New ground support equipment (GSE) required to support the Skylab Program is scheduled to arrive at the Spaceport at various intervals during 1972.

Skylab will be boosted in Earth orbit on April 30, 1973, by a two-stage Saturn V rocket from Pad A of KSC's Launch Complex 39. Skylab 2, a smaller two-stage Saturn IB topped by a modified Apollo command-service module holding three astronauts, is scheduled for launch the next day (May 1).

After separation from the Saturn IB's second stage, the CSM will be maneuvered by its crew to a rendezvous and docking with Skylab. Once on board, the crew will conduct experiments for up to 28 days before returning to Earth aboard the CSM. The service module portion of the combined spacecraft will be jettisoned prior to entry into Earth's atmosphere. The command module will splash down in the west Atlantic recovery area.

Skylab 3 is scheduled for liftoff three months after the Skylab 2 launch, with Skylab 4 slated to follow three months later. Each of these manned missions is scheduled to last up to 56 days.

Between the second and third missions and again between the third and fourth missions there will be a period of unmanned operation of the Skylab orbital assembly. The Skylab 3 crew will splash down in the Atlantic, the Skylab 4 crew in the Pacific.

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Operating at an altitude of 435 kilometers (270 statute miles), Skylab will be unhampered by Earth's protective atmospheric layer which hinders observation of space phenonema. Skylab will also provide a sustained zero-gravity environment and a sustained broad view of Earth's atmosphere.

Some 50 experiments in physical science, biomedical science, Earth applications and space applications will be conducted by the three Skylab crews during the series of missions.

The physical science experiments are expected to increase our knowledge of the Sun and its importance to life on Earth. From outside Earth's atmospheric filter, Skylab will evaluate the lighting, radiation and particle environment of near-Earth space and the radiations emanating from the Milky Way and remote regions of the Universe.

The biomedical science experiments should increase our knowledge of the biomedical functions of living organisms--human and other--by making observations under conditions different than those on Earth. These experiments should help determine the importance of Earth conditions to the functions concerned over long periods of time.

The Earth applications experiments are designed to develop techniques for observing Earth phenomena from space in the areas of agriculture, forestry, geology, geography, air and water pollution, land use and meteorology. These experiments should also indicate the influence that man has on these areas.

The experiments in space applications should result in improved techniques for space operations in the areas of crew habitability, crew/vehicle interrelationships, vehicle structure and materials. An evaluation of the equipment necessary for successful habitation of space will be conducted.

Habitation of Skylab by the first crew for 28 days will double the previous longest stay in space for U. S. astronauts which occurred during Gemini VII. Stays of 56 days by the second and third crews will redouble the Gemini VII record.

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DEC 3 0 1971

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

Ben E. McCarty
305 867-2468

FOR RELEASE: Wednesday, December 29, 1971
Release # KSC-278-71

APOLLO, MARINER LAUNCHES HIGHLIGHT 1971 AT SPACEPORT

KENNEDY SPACE CENTER, Fla.--Two highly successful Apollo lunar visits were highlights resulting from launch activity at the Kennedy Space Center (KSC) during 1971.

Sharing the spotlight with the Apollo Missions was a productive Mariner 9 orbital probe of Earth's planetary neighbor, Mars - the first such placement of an Earth spacecraft into an orbit around another planet.

KSC's Unmanned Launch Operations launched three missions using the Delta vehicle and four using an Atlas-Centaur vehicle, including the Mars probe from Cape Kennedy. Two additional blast-offs occurred from the Western Test Range during the past year.

The Apollo 14 lunar mission was extremely productive as the astronauts used a two-wheel modularized equipment transport (MET), a golf-cart-like device, to aid in transportation of experiments to appointed positions as well as to facilitate the gathering of lunar rock samples.

Lunar surface travel became sophisticated during the Apollo 15 Mission with the successful depositing on the Moon of the Lunar Roving Vehicle (LRV).

The four- wheeled, wire-mesh-wheeled vehicle ("rover"), resembling a stripped-down dune buggy, was able to carry about 454 kilograms (1,000 pounds) Earth weight at speeds up to 12.9 kilometers (eight miles) per hour. The battery-powered vehicle traversed 28.2 kilometers (17½ miles) of lunar acreage before being abandoned when the astronauts left the Moon's surface.

The Mar's probe, Mariner 9, left Earth on May 30, arriving at the red planet on November 13, ahead of schedule.

Entering orbit around Mars, Mariner 9 transmitted to Earth pictures of a violent planet-wide dust storm whose upper extent was 9.6 to 11.3 kilometers (six to seven miles) above the Martian surface. The storm obscured virtually every surface feature.

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Mariner 9 continues to function. It is hoped the storm eventually will abate and Mission photography objectives may be attained.

Chronologically, 1971 KSC launches were as follows:

January 25 - Placement into orbit of Intelsat IV-F-2, first in a new series of global communications satellites from Cape Kennedy by the Unmanned Launch Operations Directorate. The satellite forms part of a global communication, commercial satellite system. The spacecraft, placed in orbit by an Atlas-Centaur vehicle, is owned and operated by Communications Satellite Corporation (COMSAT), agent for INTELSAT, 82-member-nation consortium.

January 31 - Apollo 14 Lunar Mission to Fra Mauro highlands by Astronauts Alan B. Shepard Jr., mission commander; Stuart A. Roosa, Command Module pilot, and Edgar D. Mitchell, lunar module pilot. Mission highlights included:

--Collection of Lunar rock samples and soil.

--TV coverage from a tripod-mounted camera.

--Deployment of an American flag.

--Setting up a Solar wind experiment.

--Climb up slopes of Cone Crater by Astronauts Shepard and Mitchell.

--Photography of the highland area around the crater Descartes by Roosa using a hand-held camera in the command module.

--Electrophoretic separation, to demonstrate practicality of large scale processing of new vaccines not possible on Earth.

--Heat flow and convection tests to help determine future manufacturing techniques in space.

-- Liquid transfer, to observe the effects of different tank configurations on storage and transfer of liquids.

--Composite casting, to evaluate the prospects for metallurgical production in space.

--Recording of impact of lunar module purposely crashed into the Moon's surface after completion of its mission.

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February 2 - Placement into satisfactory equatorial orbit of a military communications satellite from Cape Kennedy by the Unmanned Launch Operations Directorate. NATOSAT II, owned and operated by the North Atlantic Treaty Organization (NATO), was launched by a Delta vehicle for the U. S. Air Force, acting as agent for NATO. The 129 kilogram (285-pound) satellite was orbited over the Atlantic Ocean at 26 degrees west longitude.

March 13 - Successful orbit of Explorer 43 (IMP- I), the eighth spacecraft in the Interplanetary Monitoring Platform Program and the largest and most advanced spacecraft in the entire NASA Explorer series. The 288-kilogram (635-pound) automated space physics satellite contained the most advanced encoder-digital data processor system ever flown on an unmanned NASA satellite. A three-stage Delta vehicle was used to place the satellite into a highly-elliptical orbit, ranging from a high point (apogee) of 206,000 kilometers (128,033 statute miles) from the Earth to a perigee of 243 kilometers (150 statute miles) with an orbital period of approximately four days and four hours.

May 8 - First of two Mariner-Mars '71 Mission failed because of an electrical problem in the Centaur second stage autopilot system. Mariner I was planned to conduct a Mars exploration mission complementary to Mariner H or to serve as a backup if Mariner H failed.

May 30 - Second of two Mariner-Mars '71 Missions (Mariner H) launched atop an Atlas Centaur from Cape Kennedy under the direction of the Unmanned Launch Operations Directorate. Launched on a precise trajectory, the 997 kilogram (2,200-pound) spacecraft traveled at a speed of 13,450 kilometers (8,326 miles per hour).

Mariner 9 arrived at the red planet on November 13, having traveled a total of 397 million kilometers (247 million miles) before being injected into an orbit approximately 1,385 kilometers (860 miles) above the planet's surface. The spacecraft carried television cameras and five other scientific experiments to study the Martian atmosphere and surface features.

Excellent pictures of the two tiny Martian Moons were taken, revealing them to be heavily-cratered. Cameras still are operational, and detailed analysis of target areas after the dust clears is expected to reveal composition and structural characteristics of the surfaces. Lower atmosphere minor constituents, such as water vapor, should be identifiable also when the haze abates.

July 26 - Apollo 15 lunar mission was flown, to Hadley Base with Lunar Rover trips to the rim of Hadley Rille and the slopes of the Appennine Mountains. Astronauts were David R. Scott, mission commander; Alfred M. Worden, command module pilot, and James B. Irwin, lunar module pilot. Voyage highlights included:

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--Intensive investigation into the origin and history of the Moon, the Earth, the Sun and the solar system.

--Three motor trips across lunar terrain.

--Use of the Lunar Rover's color television camera enabling viewers throughout the world to observe canyon depths, crater-scarred plains, rounded mountain peaks and the Marsh of Decay.

--Discovery of a unique crystalline stone, believed to be anorthosite - a primary constituent of the primordial lunar crust perhaps some 4½ billion years old.

--Many geological advancements such as the configuration that the Moon's surface was built up in stages by many lava flows or ejecta blankets (showers of rock thrown up by impacts).

--Driving of core tubes as deep as 2.36 meters (7 feet, 9 inches) into the lunar plain and placement of heat sensors into two holes to determine internal temperatures of the Moon.

--Use of an X-ray detector to pick up secondary X-rays resulting when rays strike minerals on the Moon, indicating distribution of minerals.

--Discovery of various minerals; radioactive elements; radioactive hotspots; dead volcanic craters; deposits of neon, argon and carbon dioxide.

--Deployment of Apollo Lunar Surface Experiment Package.

--Impacting of the Lunar Module on the Moon's surface following completion of lunar landing.

--Mankind's first walk in deep space by Worden, televised for viewing throughout the World.

--Successful splashdown of Command Module " Endeavour", in the mid-Pacific Ocean, using only two of three parachutes.

September 28 - An Orbiting Solar Observatory (OSO-7) with a small Test and Training Satellite (TETR-D) riding in piggyback fashion were placed into a nominal orbit by a two-stage Delta vehicle with three strap-on solid propellant motors. Launched for NASA's Goddard Space Flight Center, which acted as project manager, the OSO experiment package is obtaining measurements of X-ray and ultraviolet radiation from high temperature plasma explosions of the Sun.

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December 19 - Successful orbiting of Intelsat IV-F-3, second in the current sophisticated series of global commercial communications satellites launched atop an Atlas-Centaur vehicle by the Unmanned Launch Operations Directorate. Satellite is owned and will be operated by COMSAT. On the day following launch, the spacecraft's own motor was used to place the satellite into orbit 36,000 kilometers (22,300 miles) above the equator over the Atlantic Ocean near the location of Intelsat IV- F-2.

The Space Center's Unmanned Launch Operations Directorate also launched two spacecraft from the Western Test Range (WTR) site at Vandenberg Air Force Base.

The first, ISIS-2, which stands for International Satellite for Ionospheric Studies, was launched atop a Delta vehicle. The 263 kilogram (582-pound) Canadian built satellite studies the ionosphere, an electrical gas curtain formed by the Sun's action on the Earth's atmosphere, beginning 56.3 kilometers (35 miles) above the Earth.

ISIS-2 achieved a polar orbit with an apogee of 1,450 kilometers (896 statute miles) and a perigee of 1,360 kilometers (844 statute miles). It circles the Earth once every 113 minutes with an 88.15 degree inclination to the equator.

The second Delta launch from WTR was not successful when an Improved TIROS Operational Satellite (ITOS- B) failed to reach its nominal orbit. A second stage anomaly occurred in the Delta vehicle shortly after launch on October 21.

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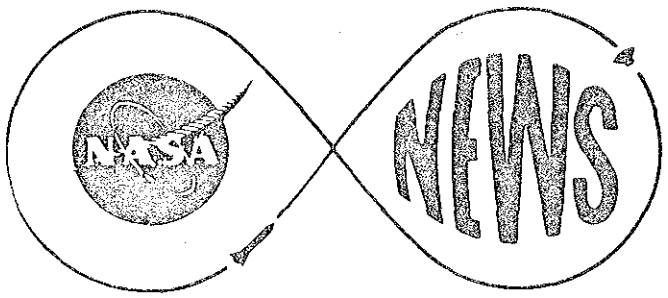

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

Ben E. McCarty
305 867-2468

FOR RELEASE:
December 30, 1971
Release # KSC-279-71

CLEAN ROOMS BEING BUILT AT KSC TO HANDLE SKYLAB SOLAR TELESCOPE

KENNEDY SPACE CENTER, Fla.--Two new clean rooms to support checkout of the Apollo Telescope Mount (ATM) in the Skylab Program are under construction at the Kennedy Space Center (KSC).

The ATM is a manned solar observatory attached to the Earth-orbiting Skylab experimental space station scheduled to be launched in 1973.

In these class 10,000 clean rooms, temperature, humidity and tiny particles of matter are carefully controlled. The air in the clean room is constantly circulated and filtered in order to avoid contamination of the delicate lenses and other critical components of the ATM experiments.

Contamination could distort spectrum measurements, or, in the worst case, block out the entire optical system of one or more experiments.

The six major experiments are designed to observe, monitor and record solar phenomena. Data will be taken in the white light, ultra violet, and X-ray regions of the spectrum.

Analysis of these data will provide new and important information on the nature, temperature and activity of the Sun and its atmosphere.

The larger of the two clean rooms will be in the Manned Spacecraft operations (MSO) Building, measuring 11.28 meters (37 feet) square and 14 meters (46 feet) high. Built by the Holloway Corp. of Titusville, it will be adjacent to the Apollo lunar module checkout stands.

Air will enter this clean room through specially designed filters which cover the entire ceiling. Inside the room, an elevated grated floor will serve as a work platform for the checkout team and will permit conditioned air to be collected and re-circulated.

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The second clean room is being built on platform A of high bay 2 in the VAB by the Booker Co. of Pensacola. Because the level of checkout activity is less here than in the MSO Building, the room is smaller and does not contain as many features.

Skylab, the United States' first manned space station, will have some 50 experiments to be carried out during three long-duration Earth-orbital missions over a period of eight months.

The first mission for 28 days, scheduled for launch in April, 1973, will emphasize medical experiments that will help determine man's physical and mental capabilities for working in space.

Two succeeding missions, each lasting 56 days, will emphasize earth resources studies and an extended study of the Sun.

# # #

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

Ben E. McCarty
305 867-2468

FOR RELEASE: MONDAY
December 20, 1971
Release # KSC-271-71

THIRD ANNIVERSARY OF APOLLO 8 WILL BE OBSERVED ON DEC. 21

KENNEDY SPACE CENTER, Fla.--The Spaceport will mark the third anniversary of man's first journey out of the influence of Earth's gravity through space to the Moon on Dec. 21.

The mighty thunder of Apollo 8's engines thrilled the world at 7:41 a.m. on that date in 1968, and started three NASA astronauts on an epic journey.

During the three ensuing years, 17 other astronauts have traveled the Moon route, 8 have set foot on Earth's satellite and all have returned safely to Earth.

Frank Borman, James A. Lovell, Jr., and William A. Anders were aboard the unnamed Apollo Spacecraft designated only, "CSM-103."

They spent Christmas at the Moon, transmitting back to Earth pictures of "this ... very foreboding horizon, a rather dark and unappetizing looking place."

Astronaut Anders on Christmas Eve read to listening millions from the Book of Genesis. Lovell and Borman continued the reading, Borman concluding:

"...and from the crew of Apollo 8, we pause with good night, good luck, a Merry Christmas, and God bless all of you - all of you on the good Earth."

The crew a short time later had real reason to celebrate Christmas when their spacecraft engine responded when called upon to increase the craft's velocity, essential to allow it to break free of lunar gravity and begin the return trip to Earth.

This critical event occurred exactly on schedule - 1:10:17 a.m. EST, December 25. A voice from the Moon announced to an anxious world, "Please be informed, there is a Santa Claus - it burned on time."

The night preceding the launch of Apollo 8 from Launch Complex 39 was clear and cool with some ground fog. Bands of light, easily seen from Orlando 50 miles away, brilliantly lighted the space vehicle.

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As the sky behind the 111-meter-high (363-foot-high) Apollo 8 lightened with the coming of dawn, thousands of spectators lining the Indian River at Titusville held their breaths as blast off time of 7:51 a.m. approached. An estimated 250,000 onlookers packed the Brevard County area.

More than 1,300 members of the press took notes, held interviews, and awaited launch time. Many were from Europe, Asia, and South America.

Supreme Court Justices, members of the Washington Diplomatic Corps representing 69 nations, prominent state and national politicians, scientists, businessmen, clergy, doctors, lawyers, and educators made up much of the 2,000 distinguished guest list, attentive to launch preparations from their viewing site north of the Vehicle Assembly Building (VAB) - about three miles from the launch site.

Exactly on schedule, the giant vehicle lifted from the pad - causing the ground to shake. As the Apollo rose - slowly at first but quickly gathering tremendous speed - many spectators broke into applause. One young man leaped to the roof of his car and waved a large American flag hoping he could be seen by the astronauts.

Thousands of other Florida residents, listening to radios, hastened to vantage spots to catch a quick glimpse of Apollo 8 as it streaked upward.

The three stage engines fired perfectly, placing Apollo 8 into a parking orbit around the Earth and bringing the craft to a velocity of 27,353 kilometers per hour (17,000 miles per hour).

Re-ignition of the vehicle's third stage increased the Apollo's speed to 39,260 kilometers per hour (24,400 miles per hour) - the speed necessary to break free from Earth's gravitational pull and to reach the Moon. Two hours, 50 minutes, 36.4 seconds after liftoff, Apollo 8 left its parking orbit and commenced its quarter of a million mile journey to the Moon.

Six days later, millions around the world awaited word of the outcome of the spacecraft's re-entry into the Earth's atmosphere. The entrance course resembled a roller coaster pattern caused by aerodynamic properties of the spacecraft.

At 54,864 meters (180,000 feet), the craft's lift caused Apollo 8 to bounce back to 64,000 meters (210,000 feet) at which point it resumed its downward course.

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Drogue parachutes deployed at 10,048 meters (34,000 feet) with the three main parachutes opening at about 3,048 meters (10,000 feet).

The craft splashed into the Pacific Ocean during the night at the rate of 27 kilometers per hour (17 miles per hour) - 147 hours and 11 seconds after its liftoff from Kennedy Space Center.

Remaining in the module until daylight, the crew of the Apollo 8 rode baskets into a helicopter which then flew them to the deck of the USS Yorktown. The carrier was within 4,663 meters (5,100 yards) of the spacecraft at the time of splashdown.

The trio were honored by President Lyndon B. Johnson, who greeted them at the White House.

Congress, in joint session, followed suit. Ticker tape parades were held in New York City, Houston, and Chicago. Many other honors followed.

Commander Borman paid tribute to the American workman and especially those who had participated in the Apollo program. He said, "We owe them a special debt of gratitude."

KSC Director Dr. Kurt H. Debus and Director of Launch Operations Rocco A. Petrone received Distinguished Service Medals and ten other KSC officials were presented Exceptional Service Awards for their individual efforts as well as efforts of the personnel they supervised.

Man had seen the other side of the Moon for the first time.

Man had traveled in excess of 39,260 kilometers per hour (24,400 miles per hour) for the first time.

Man had traveled beyond the protective sheath of the Earth's magnetic field and had returned.

Television audiences had seen the full Earth disk from afar.

Above all - all launch vehicle and spacecraft systems had functioned well with no major problems occurring, and the first pioneers of space had returned with no ill effects.

The world breathed a sigh of relief.

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Where is Apollo 8 today? The spacecraft currently is housed in the Museum of Science and Industry at Chicago.

And the astronauts?

Spacecraft Commander Borman is Senior Vice President of the Operations Group, Eastern Airlines, in Miami, Florida.

Command Module Pilot Lovell is Deputy Director of Science and Applications at NASA's Manned Spacecraft Center in Houston. He served as Commander of the ill-fated Apollo 13 spacecraft before receiving his Houston assignment.

Lunar Module Pilot Anders currently is Executive Secretary of the National Aeronautics and Space Council.

These men, backed by thousands of workers and millions of supporters, opened the door to outer space exploration by man.

# # #

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

Ben E. McCarty
305 867-2468

FOR RELEASE:
December 17, 1971
Release # KSC-273-71

APOLLO SPACECRAFT MOCKUP MOVED TO KSC VISITOR INFORMATION CENTER

KENNEDY SPACE CENTER, Fla.--A full-size dummy spacecraft used to check out assembly and test facilities for early Apollo missions has been placed on temporary display at the Spaceport's Visitor Information Center.

Known as the Spacecraft Facility Verification Vehicle (S/C FVV), the 26-meter-tall (82-foot-tall) Apollo mockup was moved Thursday from the Vehicle Assembly Building (VAB) where it has been stored. At the VAB it was held as a backup for a sturdier, more sophisticated test vehicle designated as Boilerplate 30.

Early in the Apollo Program, the S/C FVV was used extensively at both the Manned Spacecraft Operations Building and the VAB. At both locations, it was utilized to check out spacecraft handling procedures, to establish a fit-check of all ground support equipment, to verify documentation for components and to serve as an aid in training personnel. Its use permitted correction of discrepancies prior to the assembly, test and checkout of actual spacecraft.

In outward appearance, the S/C FVV very closely resembles the spacecraft for which it doubled. At its base, a tapered spacecraft lunar module adapter supports the cylindrical service module, which in turn is attached to the cone-shaped command module. Atop the command module is the launch escape system.

The S/C FVV arrived at the Spaceport in mid- April 1965 after a trip from the Marshall Space Flight Center, Alabama, where it had been utilized to support space vehicle mockup testing. At KSC, the S/C FVV was used initially at Launch Complex 34 to fit-check AS-201, a Saturn IB which was launched Feb. 26, 1966, with an unmanned Apollo command-service module.

Later the S/C FVV was used for checking out AS-500F, the full-scale Apollo/Saturn mockup used to train launch crews and check laundh facilities. It was also used for Apollo 4, the first Apollo/Saturn V launched, plus Apollo 6 and the initial testing on Apollo 8.

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At the VIC, the S/C FVV is installed outdoors along with other space hardware, including Juno 2 and Jupiter C rockets and a Gemini Titan space vehicle. In the same area are a Mercury spacecraft, a full-scale Apollo Lunar Module mockup and three types of rocket engines.

A full-scale model of the Lunar Roving Vehicle which carried Apollo 15 astronauts over the lunar surface is scheduled to be added to the outdoor display on December 18. It will remain at the VIC for several weeks except for a two-day period when it will be removed to appear at the Orange Bowl game.

Among new indoor exhibits recently added at the VIC are a scale model of the Mariner 9 spacecraft currently orbiting Mars and scale models of proposed space shuttle vehicles.

The VIC is open to the public every day of the year except Christmas.

# # #

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
John F. Kennedy Space Center
Kennedy Space Center, Fla. 32899

John W. (Jack) King
305 867-2468

FOR RELEASE:
December 16, 1971
Release # KSC-274-71

INTELSAT IV LAUNCH SET FOR 7:15 P.M. SATURDAY

KENNEDY SPACE CENTER, Fla.--The launch of an Intelsat IV communications satellite aboard an Atlas-Centaur rocket has been scheduled from Cape Kennedy at 7:15 p.m. EST on Saturday, December 18.

The mission was postponed from its planned December 6 launch date following a recent failure of an Air Force Atlas-Agena rocket from Cape Kennedy.

During the past week, a series of inspections and verification checks have been made on the propulsion system of the Atlas booster at Complex 36.

NASA project officials have determined that a sensor probe be added to the Atlas sustainer engine system prior to flight. The probe will provide information on the status of temperature in the area of the engine between the gas generator and the turbine inlet. The temperature readouts will be monitored during the Atlas ignition sequence prior to liftoff.

A final readiness meeting, covering all aspects of mission status, is scheduled for Friday evening, December 17.

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