NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

HU 3-5111

January 2, 1969

(RELEASED BY NASA HEADQUARTERS)

Apollo Technical Integration and Evaluation Contract

The National Aeronautics and Space Administration has completed contract negotiations with The Boeing Company, Seattle, to extend the technical integration and evaluation support of the Apollo Program for an additional twelve-month period. This supplemental agreement extends the work which Boeing initiated June 15, 1967.

Total value of the extended work under the cost-plus-fixed-fee supplemental agreement is $32,815,000.

Under the extended contract, Boeing will continue to assist and support NASA Headquarters and the manned space flight centers. The company will supply technical analysis and evaluation which assists NASA in arriving at technical decisions involving Apollo systems engineering, space vehicle integration, and flight readiness.

Tasks under the extended contract group into engineering evaluation, configuration management, production planning and scheduling, and readiness review.

The extended contract is in addition to Boeing's previously contracted Saturn V work which includes engineering, construction, and test of the Saturn V first stage booster; support of assembly and system integration of the vehicle's second and third stages with the first, and design engineering support of certain ground support equipment at the Kennedy Space Center, Florida.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

HU 3-5111

January 24, 1969
MSC 69-11

POST LUNAR QUARANTINE

HOUSTON, TEXAS--The stated national goal for the Apollo Program is to land and return man from the surface of the moon by the end of this decade. A prime aspect of this program will be the return of the approximately 50 pounds of lunar material which has been collected from the surface and subsurface of the moon by the Apollo astronauts.

The National Aeronautics and Space Administration has two prime responsibilities in the Lunar Sample Program: (1) the responsibility to return the samples in as near pristine state as possible to insure that the maximum scientific information can be derived during terrestrial analyses, and (2) the responsibility to protect the public's health, agriculture and other living resources against any possible extraterrestrial life forms. This latter responsibility resulted from a 1962 resolution of the Space Science Board of the National Academy of Sciences which stated, "The introduction into the earth's bioshpere of destructive alien organisms could be a disaster of enormous significance to mankind. We can conceive of no more tragically ironic consequence of our search for extraterrestrial life," from the federal regulatory responsibilities of other agencies, including the Department of Agriculture, the Department of Interior, and the U. S. Public Health Services.

To insure the maximum realization of scientific information from the lunar samples while protecting the public's health, agriculture, and other living resources, the Lunar Receiving Laboratory (LRL) has been constructed at the Manned Spacecraft Center, Houston, Texas.

-more-

Here the returned samples, the Apollo crewmen, and the Apollo command module will be quarantined while biological tests are performed to determine the effect of their release on the terrestrial biosphere. Also during the quarantine period, certain time-critical experiments will be performed behind absolute biological barriers.

Part of the biological isolation will be the Mobile Quarantine Facility which will provide isolation and containment for the returned crew from the time of their retrieval at sea to their arrival at the LRL. The MQF is designed to serve as a complete living unit for six men for up to ten days.

Another phase of this program is a special garment designed to provide adequate biological isolation for the crew and people they come into contact. This special suit, the Biological Isolation Garment, will be used during helicopter recovery of the crew.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

January 31, 1969
MSC 69-12

About 30 small aluminum brackets and fittings are being replaced or reinforced in the Apollo Lunar Module in a concerted campaign to rule out the possibility of cracking due to stress corrosion.

The changes are not expected to affect flight schedules.

The fittings which are being changed include gaseous oxygen tank supports in the ascent stage, propellant line supports in the descent stage, ascent stage heat-protective mountings and connecting fittings. Most of the pieces would fit in the palm of your hand.

The changes were approved January 29 by the National Aeronautics and Space Administration in an Apollo Spacecraft Configuration Control Board meeting at Grumman Aircraft Engineering Corp., prime contractor for the production of the lunar module. NASA approved the action after hearing presentations by both NASA agency and Grumman engineers who have been conducting an investigation into the stress corrosion problem.

Engineers emphasized there have been no failures in any of the structural testing programs attributable to stress corrosion cracking. The change action stems from a continuing monitoring of structural parts susceptible to stress corrosion. The first stress corrosion monitoring began in December, 1967, when some small cracks were discovered in LM landing gear struts.

Nine fittings have been replaced or re-inforced in LM 3, which will fly in the Apollo 9 mission and six fittings were fixed in LM 4 which is destined for Apollo 10. Both these vehicles have been pronounced ready for flight and no further structural changes are foreseen.

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On LM 5 and subsequent vehicles, 33 fittings common to each vehicle have been identified which, if cracked by stress corrosion, would degrade structural integrity. To provide additional assurance, on LM 5 and LM 6 about 25 of these fittings are being replaced and the remainder are being reinforced.

Modifications to LM 6 and beyond are being accomplished prior to delivery.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-13
February 3, 1969

HOUSTON, TEXAS--The NASA Manned Spacecraft Center announced a one-year extension of its contract with the ZIA Company of Las Cruces, New Mexico, for maintenance and operations support to NASA's White Sands Test Facility, Las Cruces.

The estimated value of the one year extension is $3,608,000 and brings the total value of the contract since November, 1966 to about $14.6 million.

Under terms of the cost-plus-award-fee contract, the ZIA Company is responsible for maintenance, repair and operation of buildings, equipment, and systems; emergency fire protection; medical services for employees; electrical and mechanical engineering support; altitude simulation system support; administrative support of supply, warehousing, transportation and heavy equipment operation; and minor construction and alteration of facilities.

The contract extension is the second of two one-year renewal options provided for in the original one-year contract. It extends the ZIA Company's period of performance through January, 1970.

The White Sands Test Facility provides major support services to NASA's Manned Spacecraft Center, Houston, in testing Apollo spacecraft propulsion systems, components and materials.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

February 6, 1969
MSC 69-14

HOUSTON, TEXAS--The National Aeronautics and Space Administration has signed a Supplemental Agreement with the Grumman Aircraft Engineering Corporation valued at about $3,438,400 for changes in the Apollo Lunar Module contract.

The agreement formally incorporated into the Grumman contract 34 changes previously authorized by NASA for modification to the contractor's documentation and reporting procedures for test and check-out of the LM, for modification to flight and ground test hardware, for additional test and effect analysis, and for crew safety hardware changes.

The modifications bring the total estimated value of the Grumman contract since January, 1963, to approximately $1.6 billion.

Grumman performs the majority of work on the Lunar Module contract at its Bethpage, New York, facility with support from its field offices in Houston, White Sands, and at the Kennedy Space Center.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

February 6, 1969
MSC 69-15

HOUSTON, TEXAS--The NASA Manned Spacecraft Center has awarded a one year contract extension to the Lockheed Electronics Company, Division of Lockheed Aircraft Corporation for computer programming and operational support services at the Center.

The cost plus award fee contract represents the fourth year of an approved five year program initailly awarded to Lockheed Electronics Company.

The one year extension is valued at about $12.7 million and brings the total estimated value of the contract since November 1965 to about $38.4 million.

Services to be performed under the contract include operational support of MSC computers, furnishing of computer programming, test data reduction, scientific and engineering data applications, business and management data applications and program documentation.

The contract provides computer and data processing support to all administrative operations and research and development programs at the Center.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

February 5, 1969
MSC 69-16

Apollo Command/Service Module Contract

The National Aeronautics and Space Administration has signed a Supplemental Agreement with North American Rockwell Corp., Space Division, Downey, Calif., valued at approximately $61,757,000 for changes in the Apollo Command and Service Module contract.

The agreement formally incorporated into the North American contract 141 changes previously authorized by NASA for modification to the contractor's documentation and reporting procedures for test and checkout of the CSM, for modification to flight and ground test hardware, additional tests and analyses, and for crew safety hardware changes. Adjustments to the contract delivery schedules were also negotiated because of the schedule impact asscciated with this large group of changes.

The modifications bring the total estimated value of the North American Contract since August 1963,to approximately $3,212,560,000.

North American Rockwell Corporation performs the majority of work on the Command and Service Module Contract at its Downey facility with support from its field offices in Houston, Texas., White Sands, N. M., and Kennedy Space Center, Florida.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-17
February 28, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration will negotiate with North American Rockwell Corp., (NR), Downey, Calif., for modifications to four Apollo spacecraft for the Apollo Applications Program (AAP).

The four Apollo spacecraft have previously been placed under contract. The combined value of these spacecraft and the modifications thereto is estimated as about $340 million.

This includes earlier costs shifted from the basic Apollo Block II contract. Total number of spacecraft under construction at the Downey facility has not changed.

The contract will require manufacturing, assembly, test and checkout of the modified command and service modules.

NR will also provide AAP mission support under the contract and will be required to do additional work related to trainers, models, mockups, simulators and design integration analysis to assure compatibility.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

MSC 69-18
February 28, 1969

LM SUPPORT TRANSFERRED

HOUSTON, TEXAS--The National Aeronautics and Space Administration has transferred responsibility for the Apollo spacecraft lunar module mission support contract with Grumman Aircraft Engineering Corp., Bethpage, New York, from the Manned Spacecraft Center, Houston, to the John F. Kennedy Space Center, Fla.

The contract, valued at $67,635,150, calls for Grumman to prepare for and process the lunar modules through pre-launch and post-launch activities at the Kennedy Space Center.

The cost-plus-fixed-fee contract was effective July 1, 1968, and runs through Nov. 30, 1970.

Grumman is the manufacturer of the lunar module at its Bethpage factory. The lunar module is that part of the Apollo spacecraft which will ferry two astronauts from the command and service modules in orbit around the Moon to the lunar surface and back.

Apollo launches are conducted at KSC.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-19
March 1, 1969

HOUSTON, TEXAS--Sea-state studies over the North Atlantic will be carried out by NASA with aircraft flying out of Shannon, Ireland, during the first two weeks in March.

The studies are part of the Earth Resources Aircraft Program leading toward development of remote sensing equipment to be used in Earth resources research, NASA said.

Manned Spacecraft Center scientists will use special airborne radar and photographic equipment to measure and obtain data on sea conditions in the areas covered. Equipment will include a radar scatterometer, infrared spectrometers and radiometer, dual-channel infrafed imager, and metric and clustered cameras.

Aircraft to be used in the NASA project will be an NP-3A Electra from MSC and a Naval Oceanographic Office C-121. A convair 990 from Ames will be checking out sensors for future meteorological missions during the same period. Supporting "ground truth" data will be obtained from weather ships patrolling the sea areas over-flown.

Flight paths of the research aircraft will be over the North Atlantic between Ireland and Iceland and data will be obtained only over international waters.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
NASA
Houston 1, Texas

488-5111

MSC 69-20
March 7, 1969

RELEASED BY KENNEDY SPACE CENTER

APOLLO 10 ROLLOUT SET MONDAY

HOUSTON, TEXAS--Apollo 10's journey to the vicinity of the moon this spring will begin with a snail's pace move from the Vehicle Assembly Building to Launch Complex 39's Pad B on Monday, March 10.

Roll-out of the towering, 363-foot Saturn V/Apollo atop its Mobile Launcher is scheduled to begin at 6:30 a.m.

A slab-topped Transporter will gently ease its 11 million pound burden out of the VAB and then begin the 25,000 foot move down the Crawlerway to Pad B at a speed of less than one mile per hour.

The Apollo spacecraft will be moving somewhat faster - about 25,000 miles per hour - this spring when the Saturn V's S-IVB third stage kicks it out of a parking orbit on a trajectory for the moon.

The Apollo 10 flight will mark the first time Pad B has quickened to life under the impact of launch preparations. The first four flights of the Saturn V - two unmanned and two manned - had their beginnings at Complex 39's Pad A.

Apollo 10 is to carry Astronauts Thomas Stafford, John Young and Eugene Cernan into lunar orbit in a dress rehearsal for a manned landing - perhaps on Apollo 11 scheduled for mid-summer.

Apollo 10 Commander Stafford and Lunar Module Pilot Cernan are to detach the LM and swoop down to within 50,000 feet of the lunar surface before separating from the LM descent stage and rejoining Young orbiting the moon in the Command/Service Module.

Despite press speculation that a manned landing attempt might be made on Apollo 10, NASA program officials have emphasized that the LM being carried on this mission is not configured for a lunar landing.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

March 17, 1969

RELEASED BY NASA HEADQUARTERS

The National Aeronautics and Space Administration said today the Apollo 10 mission profile remains in its present form -- a lunar orbit mission with a lunar module descent to within 50,000 feet of the moon's surface -- the launch day will be May 18. The May 18 date is the second day of the lunar launch window for that month.

The change from the first to the second day of the May window would permit observation and collection of data on Apollo landing site 2 as the area of primary interest and would also permit observation of site 3 after sunrise on the Moon. The Apollo site 1 was the area of primary interest in the December flight of Apollo 8.

A final decision as to the specific nature of the Apollo 10 mission will be made next week after a review of the Apollo 9 mission.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

March 19, 1969
MSC 69-21

HOUSTON, TEXAS--The National Aeronautics and Space Administration has signed a Supplemental Agreement with North American Rockwell Corporation valued at approximately $27,000,000 for changes in the Apollo Command and Service Module contract.

The agreement formally incorporates into the North American contract 156 changes previously authorized by NASA for modification to the contractor's documentation and reporting procedures for test and checkout of the CSM, for modification to flight and ground test hardware, for additional test and effect analysis, and for crew safety hardware changes.

North American Rockwell Corporation performs the majority of work on the Command and Serivce Module contract at its Downey, California facility with support from its field offices in Houston, Texas; White Sands, New Mexico; Tulso, Oklahoma; and Kennedy Space Center, Florida.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

March 24, 1969
MSC 69-22

HOUSTON, TEXAS--Fifteen National Aeronautics and Space Administration and contractor employees will spend one week in 'isolation' as part of a pre-mission simulation of the Lunar Receiving Laboratory.

Purpose of the seven-day test is to demonstrate the logistics and quarantine aspects of the Crew Reception Area. Personnel taking part in the simulation will work, eat and sleep inside the multi-roomed Crew Reception Area (CRA) and their only contact with the outside world will be telephone or through glass walls.

Apollo astronauts returning from the Moon later this year will spend more than two weeks in the Crew Reception Area until the biological testing of lunar samples is completed. The crew will be released when it is determined the samples contain no harmful pathogens.

The simulation will exercise all aspects of the CRA quarantine, using in most cases the same personnel who will be involved in the mission with the exception of the flight crew. The part of the flight crew will be performed by three of the personnel assigned to this simulation.

Dr. Clarence Jernigan, CRA Medical Test Director, said the major objectives of the program, which is being conducted as part of the six week simulation of the overall lunar lab, is to demonstrate the CRA logistics and demonstrate the feasibility and adequacy of the quarantine operations plan, the medical contingency plan and the CRA release plan.

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Dr. Jernigan said the simulation will include all activities occurring from the arrival of the sample rock boxes, film and biological specimens. All biological barrier systems will be operative during the period and personnel will be maintained in the CRA for the length of the test. Briefings and visits by test personnel families will be conducted in the crew briefing room behind the glass wall barrier.

With the exception of the crew personnel, all test personnel and simulated sample rock boxes and spacecraft film were introduced into the CRA Monday morning.

The stand-in flight crew, flight surgeon and recovery technician will enter the quarters at 8 a.m. Tuesday.

The test plan calls for the first several days to be a simulation of the first week of post-mission quarantine and the last few days of the test will be devoted to release of the occupants. All test personnel will undergo daily physical examinations and be subjected to 'simulated illnesses' during the week long test.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas
483-5111
March 24, 1969

RELEASED BY NASA HEADQUARTERS

Apollo 10, scheduled for launch May 18 by the National Aeronautics and Space Administration, will be a lunar orbit mission in which two astronauts will descend to within 50,000 feet of the Moon's surface.

The decision today to fly the mission as previously planned followed a series of reviews of technical and operational data from the Apollo 9 flight in earth orbit early this month and an examination of options for the next mission.

The eight-day Apollo 10 flight is scheduled for launch from Kennedy Space Center, Florida, with Astronauts Thomas P. Stafford as Spacecraft Commander, John W. Young as Command Module Pilot, and Eugene Cernan as Lunar Module Pilot. The backup crew is L. Gordon Cooper, Donn F. Eisele and Edgar D. Mitchell.

The purpose of the flight is to provide additional experience in combined system operation during the 3-day trip to the vicinity of the Moon and in lunar orbit. With the exception of the actual landing of the lunar module on the lunar surface, the mission plan is the same as for the lunar landing mission.

While the spacecraft circles the Moon at an altitude of about 60 miles, Stafford and Cernan in the lunar module will separate from the command and service modules, approach twice to within about 10 miles of one of the preselected Apollo landing sites, then rejoin Young in the command module in maneuvers similar to those performed in Earth orbit by Apollo 9.

The closest approach to the surface will be at pericynthion of the lunar module transfer orbit. Because of propellant limitation in the ascent stage for this flight it will be impossible to make a landing and subsequent liftoff from the Moon.

During 11 more revolutions of the Moon, the crew will make landmark sightings, take photographs, and transmit live TV views of the lunar surface, the Earth from lunar distance, and their own activities inside the command module.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

March 25, 1969
MSC 69-23

HOUSTON, TEXAS--The NASA Manned Spacecraft Center has awarded a one year contract extension to the Service Technology Corporation of Houston for facility support services at the Center.

The cost-plus-award/incentive fee contract represents the second year of an approved program initially awarded to LTV Aerospace Corporation, Range Systems Division, Dallas. Service Technology Corporation is a subsidiary of LTV Aerospace Corporation.

The one year extension is valued at about $11.7 million and brings the total estimated value of the contract since December 1967 to about $22.9 million.

Services to be performed under the contract include operations, maintenance, repairs, alterations, minor construction, rigging and engineering and drafting services for the Manned Spacecraft Center. The contract provides facilities support to all administrative operations and research and development programs at the Center.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-24
April 3, 1969

HOUSTON, TEXAS--Flights of the Lunar Landing Training Vehicle (LLTV) are scheduled to resume Friday morning at Ellington AFB.

During a flight of five to six minutes, three takeoffs and landings will be made by test pilot Harold E. "Bud" Ream of Aircraft Operations, a veteran of more than 35 lunar landing vehicle flights. LLTV #2 will hover close to ground--about 50 feet--to check the basic systems of the LLTV and examine the handling and flying characteristics of the vehicle with an increased thruster output in the attitude control system. Thruster level had previously been 60 pounds. Since the crash of LLTV #1 on December 8, the level of thrust has been increased to 90 pounds. A total of 16 attitude thrusters are positioned on the LLTV with eight in reserve status as a backup system.

At takeoff LLTV #2 will have about 735 pounds of hydrogen peroxide fuel in its tanks. Each time the LLTV lands, some 200 pounds of fuel will be burned off through two 500 pound lift rockets. This reduction in weight in increments will provide an opportunity to check the flying characteristics of the LLTV at varying weights. LLTV #2 flew twice before the December 8 accident suspended LLTV flight operations.

Preflight checkout of the LLTV will begin late this evening and continue through early Friday morning. Ream is scheduled to board the craft around 6:30 a.m.

Twelve flights are scheduled for the flight test program with a flight scheduled about every three days prior to making the vehicle available for astronaut training.

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MSC 69-24
Add 1

The LLTV is built by Bell Aerosystems Company of Buffalo, New York. Three LLTV's were contracted for and delivered at a cost of $5.6 million in the latter part of 1967.

Prior to NASA's contracting for the LLTVs, two research vehicles, similar in design were flown in a research program at NASA's Flight Research Center, Edwards, Calif. These were modified and shipped to Houston in December 1966. One of these, LLRV #1 was checked out and used for training purposes by astronauts until Neil Armstrong was forced to parachute to safety May 6, 1968, but the vehicle was totally destroyed when it crashed.

In the crash of LLTV #1 last December 8, Joe Algranti, Aircraft Operation test pilot, successfully parachuted from the craft.

These wingless, free-flying vehicles are used to simulate the final 500 feet of the lunar landing. The vehicles use a combination of propulsion systems to sustain flight. Primary support for the vehicle is provided by a 4,200-pound thrust turbofan engine, modified for vertical flight and installed on a gimball mounting behind the cockpit.

The engine is automatically controlled and lifts five-sixths of the vehicle's weight, thus counteracting five-sixths of the earth's gravity and simulating the one-sixth gravity of the moon.

Lift for the remaining one-sixth of the vehicle's weight is provided by two Bell rocket engines with a maximum of 500 pounds thrust each.

The LLTV has a cockpit and control system resembling those of the Lunar Module, however it only accommodates one pilot instead of the two that will be in the moon landing vehicle.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

April 8, 1969
MSC 69-25

HOUSTON, TEXAS--Manned Spacecraft Center officials today described a color television system which may be flown on the Apollo 10 lunar orbit mission next month. They cautioned, however, that the system may not be ready in time for the flight.

The system uses a camera with an overall length, including lens, of about 18 inches. It is about four-and-a-half inches wide, about six-and-a-half inches high and weighs about twelve pounds. The system also includes a three-inch television monitor which can be mounted atop the camera or positioned at a convenient location in the cabin, allowing the astronauts to see a black and white view of the picture they are transmitting to earth.

A decision to fly the color system on Apollo 10 will not be made until after the countdown demonstration test scheduled for the first week in May at NASA's Kennedy Space Center as a dress rehearsal for the Apollo 10 launch. Apollo Spacecraft Program Manager, George M. Low said the decision at that time will be based on the quality of the televised picture and the availability of flight hardware. Since the development time for the equipment is very short, he said, there is a good possibility that it will not be installed in Apollo 10.

If it is flown, the color TV system would be carried as an experiment on the command module in addition to the black and white TV system. The color equipment is not designed for use in the lunar module or on the lunar surface.

The color camera can be hand-held or mounted on brackets, and it is equipped with a zoom lens which can be adjusted for close-up or wide-angle views.

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The system transmits a sequence of three black and white pictures, each seen through a different color filter, for every color frame. The sequences of black and white pictures are re-constituted by a converter on the ground into a color picture which can be fed to U.S. commercial TV networks.

The color camera was designed and built by the Westinghouse Electric Corporation, Baltimore, Maryland, using much of the same technology developed for the Westinghouse lunar TV camera -- a black and white system. Cost of the color camera and its monitor is about $40,000.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

April 9, 1969
MSC 69-26

HOUSTON, TEXAS--A survey of selected natural resources sites is being conducted for the Mexican National Commission for Outer Space (CNEE) by the National Aeronautics and Space Administration.

For the next two weeks, an aircraft of MSC's Earth Resources Division will fly over six sites selected by the Mexican government as part of phase three of a cooperative program entered into by the two governments in February 1968. The overall research program is designed to develop techniques for acquiring, interpreting, and using data to provide scientific and technical experience which would be useful in the development of earth resources survey techniques.

The survey will begin April 9 and will conclude about April 20.

The NASA aircraft (a Lockheed P-3-A) will fly over the sites which cover several disciplines and are located in the vicinity of Mexico City. Equipped with camera, radar and imagery systems, the aircraft will fly at varying altitudes gathering data which will be used by Mexican scientists.

The sites and their locations are:

Geology - El Dorado

Geo-thermal - Ixtalr

Hydrology - Tolucca Valley

Agriculture - Chapingo

Hydrology/Agriculture - Papaloapan Basin

Oceanography - Vera Cruz

-more-

MSC 69-26

Add 1

The Mexican scientists taking part in the program spent several months at the Manned Spacecraft Center and at other locations throughout the U.S. attending classes and learning about NASA's Earth Resources Aircraft Program. Following a 12-week course at MSC which started in February 1968, the foreign scientists took part in a six-week field trip to various government and university centers observing and studying the use of resource data in various discipline fields.

The NASA is conducting a similar program with the government of Brazil.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-27
April 10, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration today named Astronauts Charles Conrad, Jr., 38; Richard F. Gordon, Jr., 39; and Alan L. Bean, 37, as prime crewmen for the Apollo 12 mission.

Apollo 12 is a lunar landing mission similar to Apollo 11, scheduled as the initial manned landing on the moon. It will be flown four to six months after the July 1969, Apollo 11 mission.

Preliminary plans call for Apollo 12 to land at a site other than No. 2, for which Apollo 11 is targeted. Two periods of extravehicular activity on the lunar surface are tentatively scheduled for Apollo 12 totaling more than five hours. It is expected that the scientific package to be left on the moon will contain more experiments than are included in the Apollo 11 package.

Backup crewmen for Apollo 12 are Astronauts David R. Scott, 36; Alfred M. Worden, 37; and James B. Irwin, 39. A support team has not yet been named.

The Apollo 12 spacecraft--command and service modules 108 and lunar module 6--are already at the Kennedy Space Center, Florida.

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Conrad, a commander, heads the all-Navy prime crew. Gordon, a commander, is command module pilot, and Bean, a lieutenant commander, is lunar module pilot. Conrad and Bean will explore the lunar surface while Gordon remains in lunar orbit in the command module.

The all-Air Force backup crew is commanded by Scott, a colonel. Command Module Pilot Worden is a major, and Lunar Module Pilot Irwin is a lieutenant colonel.

The prime crew served as backup for Apollo 9. Conrad and Gordon are veterans of the Gemini Program, in which Conrad flew twice--Geminis V and XI. Gordon flew with Conrad in Gemini XI. Apollo 12 will be Bean's first space flight.

Scott flew the Apollo 9 and Gemini VIII missions. Worden and Irwin have not yet flown in space, but both have been members of support teams for Apollo flight crews. Irwin commanded the test crew for the extensive thermal-vacuum testing of the lunar module prior to committing it to manned flight.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
NASA
Houston 1, Texas

April 25, 1969
MSC 69-28

HOUSTON, TEXAS--Saint Peter and Paul High School, Seneca, Kansas, has the unique distinction of having four students selected for participation in the 1969 NASA-NSTA Youth Science Congress to be held in Denver, Colorado, May 1 through May 3, 1969. The students, all taught by Sister M. Berchmans Bernadt, are among the total of 20 students selected from throughout the six-state region of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico.

The Seneca students and their winning science projects are: Joyce E. Koelzer, 402 North 7th Street, "The Absorption and Inhibition of the Uptake of P-32 by Plants"; Terry L. McGeeney, 408 North 7th Street, "The Effects of Certain Environmental and Harmonal Factors on Color Change in Frogs"; Craig J. Altenhofen, 702 Roanoke Street, "Effective Use of Trifluralin in Soybean Production"; and Ronald E. Hunninghake, 601 North 3rd Street, "The Effects of an Electromagnetic Field on the Basipetal Movement of 3-Indoleactic-1-C14 Acid in Oat Coleoptiles".

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were

- more -

obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group. In addition to the seminars, the students will tour selected scientific laboratories and educational facilities within the area. Each student will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
NASA
Houston 1, Texas

April 25, 1969
MSC 69-29

HOUSTON, TEXAS--Three Dickinson area students have been selected for participation in the 1969 NASA-NSTA Youth Science Congress to be held in Denver, Colorado, May 1 through May 3, 1969. Thomas J. Illich, Route 4, Dickinson, and Marcia M. Juelfs of Ralph are students at St. Mary's High School, New England. Both are students of Sister M. Adrienne. Jolene A. Montgomery, 1020 West Fifth Street, Dickinson, attends Trinity High and is taught by Sister Jean Marie.

The three students were among twenty selected from throughout the six-state area of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico. Their winning science research projects are: Thomas J. Illich, "Electro-osmosis"; Marcia Juelfs, "Sound Effects on the Growth of Plants"; and Jolene Montgomery, "Discriminated Avoidance Conditioning in the Goldfish."

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group. In addition to the seminars, the students will tour selected scientific laboratories and educational facilities within the area. Each student

will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

April 25, 1969
MSC 69-30

HOUSTON, TEXAS--Central Catholic High School, West Point, has the distinction of having two students selected for participation in the 1969 NASA-NSTA Youth Science Congress to be held in Denver, May 1 through 3, 1969. Both students are taught by Mrs. Lois Schaaf, Beemer, Nebraska, and are among the total of twenty selected from throughout the six-state region of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico.

The Central Catholic High students and their winning science research projects are: Wayne C. Svoboda, East Wisner Street, "A Study of the Synthetic Polymer, Pyran, as an Interferon Inducer in Prevention and Treatment of Adenocarcinoma in Mice" and Dale E. Wordekemper, 810 East Sherman, "Skin Transplants and the Hamster."

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group. In addition to the seminars, the students will tour selected scientific laboratories and educational facilities within the area. Each student

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will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

April 25, 1969
MSC 69-31

HOUSTON, TEXAS--Cherry Creek High School, Denver, Colorado, has the distinction of having two students selected for participation in the 1969 NASA-NSTA Youth Science Congress to be held in Denver May 1 through May 3, 1969. Both students are taught by Miss Lillian Riblet, 3051 South Dexter Way, and are among a total of twenty selected from throughout the six-state region of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico.

The Cherry Creek students and their winning science research projects are: Douglas L. Mallory, 21 Martin Lane, Englewood, "The Role of Electricity in Osmosis"; and Thomas A. Mee, 5891 South Parker Road, Denver, Colorado, "The Effect of Complete Metamorphosis upon the Retention of a Conditioned Response from the Larval to the Adult Stage in Phormia Regina."

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group. In addition to the seminars, the students will tour selected scientific

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laboratories and educational facilities within the area. Each student will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

April 25, 1969
MSC 69-32

HOUSTON, TEXAS--Three Topeka area students have been selected for participation in the 1969 NASA-NSTA Youth Science Congress to be held in Denver, Colorado, May 1 through May 3, 1969. Bruce N. Nall, 1900 West 32nd Terrace and Glen R. Tuchscherer, 2021 Pembroke Lane, attend Topeka West High School and are the students of Mr. Richard Schiller, 2007 Mission. Daniel H. Shevrin attends Topeka High School and is taught by Miss Ruth Phillips, 2720 Lee Center.

The three students were among twenty selected from throughout the six-state region of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico. Their winning science research projects are: Bruce N. Nall, "Designing, Building, and Programming a Digital Computer Using Direct Coupled Transistor Logic Circuits"; Glen R. Tuchschere, "The Effect of Riboflavin on Biotic and Abiotic Growth Inhibitors"; and Daniel H. Shervrin, "The Relationship between Hatching Behavior and Postnatal Maturation in the Chick."

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group.

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In addition to the seminars, the students will tour selected scientific laboratories and educational facilities within the area. Each student will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

April 25, 1969
MSC 69-33

HOUSTON, TEXAS--Fort Collins High School has the distinction of having two students selected for participation in the 1969 NASA-NSTA Youth Science Congress to be held in Denver, May 1 through May 3, 1969. Both students are taught by Mrs. Catherine C. Morrill, 526 South Howes Street, and are among the total of twenty students selected from through the six-state region of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico.

The Fort Collins High students and their winning science research projects are: Danny A. Hess, 5332 Apple Drive, "Water Temperature Effect on Rate of Growth and Development of Culex Tarsalis" and George R. Moreng, Route 2, Fort Collins, "Growth of the Chick as Affected by Diet Following Embryonic X-Irradiation."

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group. In addition to the seminars, the students will tour selected scientific laboratories and educational facilities within the area. Each student

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will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
NASA
Houston 1, Texas

April 25, 1969
MSC 69-34

HOUSTON, TEXAS--Two Campus High School students, Calvin D. Parker and Larry E. Loader, have been selected for participation in the 1969 NASA-NSTA Youth Science Congres to be held in Denver, Colorado, May 1-3, 1969. Parker is taught by Mrs. Janice Martin, 2206 West Mc Arthur and Loader is a student of Mr. Loren Lutes, 2100 West 55th Street, South Wichita. They are among the total of twenty students selected from throughout the six-state region of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico.

Parker's winning science research project was "A Study of the Effect of Cigarette Tar on the Production of Papilloma", while Loader's project was entitled, "A Determinative Study of the Nutritional Effects Irradiated Meat has on Rattus Rattus."

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group. In addition to the seminars, the students will tour selected scientific

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laboratories and educational facilities within the area. Each student will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

April 25, 1969
MSC 69-35

HOUSTON, TEXAS--Elaine A. Amrein, 124 East Mound Street, Atchison, Kansas, has been selected for participation in the 1969 NASA-NSTA Youth Science Congress to be held in Denver, Colorado, May 1-3.

She is a student at Mount Saint Scholastica Academy and is taught by Sister Maxine Zeller and is among the total of twenty students selected for the Congress participation from a six-state region of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico. Her winning research project was entitled, "Establishing Rotation Patterns of Sunspots and a Method of Determining whether the Number of Sunspots will Increase or Decrease Annually."

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group. In addition to the seminars, the students will tour selected scientific laboratories and educational facilities within the area. Each student will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

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The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

April 25, 1969
MSC 69-36

HOUSTON, TEXAS--John P. Buehler, 311 La Plata Road, N. W., Albuquerque, a student at Valley High School, has been selected to participate in the 1969 NASA-NSTA Youth Science Congress to be held in Denver, Colorado, May 1-3, 1969. He is among the total of twenty students selected for the Congress for the six-state region of North Dakota, South Dakota, Nebraska, Kansas, Colorado and New Mexico.

Buehler's science research project was entitled, "A study of Sunspots and the Correlation between Sunspot Activity and Terrestrial Temperature." He is taught by Mrs. Vi Hefferan, 215 7th Street, N.W.

The students were selected on the basis of an abstract submitted by each applicant which described the student's investigation or experimental research by giving a concise summary of a problem, the procedures used to evaluate it, and an interpretation of the results which were obtained. During the Congress each student will make an oral presentation of their research and defend it before the other members of the group. In addition to the seminars, the students will tour selected scientific laboratories and educational facilities within the area. Each student will be awarded a bronze medallion to commemorate his or her participation in the Congress and each will receive certificates of recognition for their school and teacher sponsor.

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The Youth Science Congresses are conducted annually by the National Aeronautics and Space Administration and the National Science Teachers Association. The program was initiated to provide opportunity, encouragement, and motivation for able students to further their interest in science through experiences similar to those of practicing engineers and scientists. The regional chairmen for the Congress are Dr. Mattison L. Story, Educational Programs Office, Manned Spacecraft Center, Houston, Texas and Dr. Joseph L. Shoemaker, School of Education, Colorado State College, Greeley, Colorado.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

April 22, 1969
MSC 69-38

HOUSTON, TEXAS--The National Aeronautics and Space Administration named Brian M. Duff today to the position of Public Affairs Officer for the Manned Spacecraft Center in Houston effective April 28.

Paul Haney, presently in the position at Houston, will return to NASA Headquarters in Washington to become Special Assistant to the Assistant Administrator for Public Affairs.

Duff, formerly director of Special Events in NASA's Office of Public Affairs, more recently has been Vice President for Communications of the National Urban Coalition in Washington. Prior to joining NASA in 1963, he was correspondent for the Copley newspapers in Washington from 1960 to 1963. From 1958 to 1960, he was a reporter for the San Diego Union. From 1952 1958, he was a reporter-editor for the Associated Press in California.

Duff was born in Ottawa and earned his BA degree from the University of Michigan. He is a Navy veteran.

Haney is a native of Akron, Ohio, and began his journalism career with the Akron Beacon Journal in 1945 while in high school. He has worked for the Associated Press, Erie (Pennsylvania) Times, Memphis Commercial Appeal, the Washington Evening Star.

He joined NASA in 1958 in Washington, and served in various capacities, including News Director, until 1962 when he was assigned to the newly created position of Public Affairs Officer for the Office of Manned Space Flight. In 1963, he was named Public Affairs Officer in Houston. He is also a Navy veteran.

In his new position, Haney will coordinate the development of news media material for the Manned Flight Program with concentration on the Apollo manned lunar landing. These include a special feature service for newspapers; television and radic programming; press kits and publication.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

April 23, 1969
MSC 69-39

HOUSTON, TEXAS--A comprehensive Flight Readiness Review of the Apollo 10 mission was conducted today at the Kennedy Space Center.

Participants included key Apollo project officials from NASA's Office of Manned Space Flight, Marshall Space Flight Center, Manned Spacecraft Center, Kennedy Space Center and the Department of Defense. The review covered status presentations on the Apollo command/service modules, lunar module, Saturn V launch vehicle, Apollo 10 flight profile, launch operations, tracking, recovery and flight crew readiness.

Lt. Gen. Samuel Phillips, Apollo Program Manager, said, "at this time we are go for the launch of Apollo 10 on May 18, subject to successful completion of upcoming scheduled operations."

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

April 24, 1969
MSC 69-40

HOUSTON, TEXAS--A U. S. Air Force Reserve C-119, enroute from Houston to California, was forced to jettison part of its cargo of Air Force and NASA equipment Wednesday afternoon when the aircraft developed engine trouble over New Mexico.

The aircraft, part of the 433 Tactical Air Lift Wing (Reserve) at Kelly Air Force Base, was flying at approximately 6,000 ft altitude when trouble developed in one of its two engines. The aircraft commander gave the order to jettison the equipment to lighten the load.

The aircraft-operating with one engine-was able to make an emergency landing at a field at Las Vegas, New Mexico after successfully jettisoning part of its cargo. About 3,000 pounds of NASA ground support equipment and undetermined Air Force equipment was dropped prior to the aircraft's landing.

The aircraft was ferrying the equipment from Ellington Air Force Base, Houston to the Naval Air Station at El Centro, California, where a drop test was scheduled to be made in the NASA's test program of the parawing. The parawing is one of several systems under study by the NASA for the use in possible future land landings of spacecraft.

The NASA equipment jettisoned included electronic ground test support equipment, numerous boxes and crates containing drop gear and tools. The aircraft commander managed to land the plane before having to jettison the parawing test vehicle - Instrumented Spacecraft Test Vehicle #2.

An air search is underway to determine the location of the jettisoned equipment. This accident will have no effect on the upcoming Apollo X mission.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-41
April 28, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration requested proposals today from the aerospace industry for design and planning studies of a space station program for the mid-1970's.

Major effort of the studies will be preliminary design and planning of a 12-man Earth-orbital space station which could be developed by 1975. It would be designed to have an operational life of 10 years, subject to resupply of expendables and rotation of crews with logistics vehicles. The space station is envisioned as the initial element of a large space base.

The work will include a conceptual design of a 50-man space base made up of specialized modules assembled in low Earth orbit in the late 1970's and early 1980's. The space base would be a centralized facility in orbit comparable to a scientific and technical research, development and operations center on Earth.

Scientists and engineers of many disciplines could utilize its unique features, such as weightlessness, vacuum, Earth viewing and unobstructed celestial viewing for a large variety of research and applications activities.

Proposals are to be submitted to the Office of Manned Space Flight, Washington, D. C. on June 9. From the proposals two firms will be selected to perform 11-month studies under cost-plus-fixed-fee contracts. One contract will be managed by NASA's Marshall Space Flight Center, Huntsville, Ala., and the other by NASA's Manned Spacecraft Center, Houston.

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Logistic systems to resupply expendables and rotate crews of both the space station and the space base will be included in the studies. Modified Apollo and Gemini spacecraft will be considered as initial logistic systems for the space station design in the event an advanced space shuttle would not become available for the early phase of space station operations. Various concepts of advanced space shuttles will be evaluated to identify the most economical means of supplying a large space base. Each of the shuttle concepts would be capable of land landing at precise locations.

Data developed from these and other studies will be available for final design of a future space station if such a program is approved for development.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

RELEASED BY NASA HEADQUARTERS
Immediate Release May 7, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration has established task groups to handle its efforts on the Manned Space Station and the Space Shuttle.

The Space Station is a flexible centralized base of support permanently operating in earth orbit. The Space Shuttle is a system of low cost transportation from the earth's surface to orbit and return. It will service the Space Station and carry out other important space missions at greatly reduced operating costs.

The Space Shuttle effort is headed by Dr. George E. Mueller, in addition to his responsibilities as NASA Associate Administrator for Manned Space Flight. Charles W. Mathews, Deputy Associate Administrator for Manned Space Flight, heads the Space Station effort, in addition to his present duties.

Reporting to Mueller is a Space Shuttle Task Group under LeRoy E. Day, former Director of Apollo Test. The group will develop NASA material for a report on Space Shuttles to the President's Space Task Group by June 15. NASA will work

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directly with the Department of Defense to provide an integrated report serving as the basis for the President's Task Group recommendations on Space Shuttles.

Reporting to Mathews will be Frank Borman, former Deputy Director of Flight Crew Operations at the Manned Spacecraft Center. As Field Director for the Space Station effort, Borman will be responsible for integration of study efforts between centers and other elements of NASA. Borman will be located at the Manned Spacecraft Center, Houston. Information already developed in connection with a request for proposals from industry on the Space Station program will be utilized in providing material on a Space Station to the President's Task Group.

NASA has requested these proposals from industry for design and planning studies of a Space Station program for the mid-1970's. This contracted effort will encompass the Space Station, its uses, and its operations, as well as the conceptual design of a larger space base and an advanced shuttle spacecraft for logistics support of the Space Station. Two contractors will be selected to perform the 11-month studies. One of the contracts will be managed by the Manned Spacecraft Center, Houston, and the other by the Marshall Space Flight Center, Alabama.

Day has served as Director, Apollo Test, OMSF, since July 1966. He joined the NASA Gemini Program Office in 1962 and was Acting Deputy Director of the Gemini Program prior to his Apollo Program Office assignment.

Day was born in Doswell, Va., and graduated with a BS degree in Aeronautical Engineering from the Georgia Institute of Technology. He received his MS degree in Engineering from the University of California at Los Angeles. In 1959, Day was awarded a Sloan Fellowship for a year's graduate study at Massachusetts Institute of Technology (MIT), resulting in an MS degree in Industrial Management.

Before joining NASA, Day was the Deputy Head, Missile Program Department at the U. S. Naval Missile Center, Pt. Magu, Calif.

He is married to the former Mary E. Hornbuckle. The Days and their children live in Rockville, Md.

Borman has been Deputy Director, Flight Crew Operations, MSC since January.

Prior to the historic Apollo 8 flight around the Moon. in December, Borman, a USAF Colonel, performed a variety of special duties, including backup command pilot for the Gemini 4 flight and member of the Apollo 204 Review Board.

As command pilot of the history-making Gemini 7 mission, launched Dec. 4, 1965, he participated in establishing a number

of space "firsts" -- among which are the longest manned space flight (330 hours and 35 minutes) and the first rendezvous of two manned maneuverable spacecraft as Gemini 7 was joined in orbit by Gemini 6. He was selected as an astronaut by NASA in September 1962.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

488-5111

MSC 69-42

HOUSTON, TEXAS--Richard S. Johnston, 42, Special Assistant to the Director of the Manned Spacecraft Center, has been named to coordinate all Center activities relating to Lunar Receiving Laboratory (LRL) operation and spacecraft and operational problems associated with back contamination.

Dr. Robert R. Gilruth, MSC Director, said that Mr. Johnston will be responsible for assuring that the laboratory is in a state of operational readiness prior to the first lunar landing. Dr. Gilruth said the appointment of Mr. Johnston reflected his desire to maintain a close personal supervision of all center activities associated with the LRL and the reception of lunar samples.

Johnston will assume his additional duties immediately. He will also continue serving as Special Assistant.

The LRL is responsible for properly processing lunar samples and for handling time-critical scientific experiments.

Back contamination involves the possible return of harmful pathogens from the lunar surface to earth at the time of the return of astronauts who have made the lunar landing. While the possibility is considered remote, the quarantine of returning astronauts and samples will be accomplished until such time as it can be determined that no contamination exists.

Johnston has served with MSC since 1959. He was Chief of the Crew Systems Division from August 1963 until October 1968, where he was named Special Assistant to the Director. He is an expert in the design and development of space suits, environmental control systems and bioinstrumentation.

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He is a member of the American Institute of Astronautics and Aeronautics, the Aerospace Medical Association and has received several achievement awards for his contribution to space flight.

Johnston is a native of Keyser, West Virginia. He is married to the former Jean Armbruster. They have two children: Susan, 16, and David, 13. The Johnstons reside in Seabrook, Texas.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

May 7, 1969
4 p.m.

RELEASED BY NASA HEADQUARTERS

Two Apollo 10 astronauts will descend to within eight nautical miles of the Moon's surface, the closest man has ever been to another celestial body.

A dress rehearsal for the first manned lunar landing is scheduled for launch May 18 at 12:49 p.m. EDT from the National Aeronautics and Space Administration's Kennedy Space Center, Fla.

The eight-day, lunar orbit mission will mark the first time the complete Apollo spacecraft has operated around the Moon and the second manned flight for the lunar module.

Following closely the time line and trajectory to be flown on Apollo 11, Apollo 10 will include an eight-hour sequence of lunar module (LM) undocked activities during which the commander and LM pilot will descend to within eight nautical miles of the lunar surface and later rejoin the command/service module (CSM) in a 60-nautical-mile circular orbit.

All aspects of Apollo 10 will duplicate conditions of the lunar landing mission as closely as possible--Sun angles at Apollo Site 2,

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the out-and-back flight path to the Moon, and the time line of mission events. Apollo 10 differs from Apollo 11 in that no landing will be made on the Moon's surface.

Apollo 10 is designed to provide additional operational experience for the crew; space vehicle; and mission-support facilities during a simulated lunar landing mission. Among desired data points to be gained by Apollo 10 are LM systems operations at lunar distances as well as overall mission operational experience. The LM was successfully checked out in Earth orbit in Apollo 9, including a rendezvous sequence simulating lunar orbit rendezvous.

Space navigation experience around the Moon is another benefit to be gained from flying a rehearsal mission before making a lunar landing. More knowledge of the lunar potential, or gravitational effect will provide additional refinement of Manned Space Flight Network tracking techniques, and onboard landmark tracking will bolster this knowledge.

Analysis of last December's Apollo 8 lunar orbit mission tracking has aided refinement of tracking and navigation techniques and Apollo 10 should reduce error margins still further.

Apollo 10 crewmen are Commander Thomas P. Stafford, Command Module Pilot John W. Young and Lunar Module Pilot Eugene A. Cernan. The mission will be the third space flight for Stafford (Gemini 6 and 9) and Young (Gemini 3 and 10), and the second for Cernan (Gemini 9). The three were recycled from the from the Apollo 7 backup crew. The Apollo 10 backup crew is Commander L. Gordon Cooper, Command Module Pilot Donn F. Eisele and Lunar Module Pilot Edgar D. Mitchell.

Stafford is an Air Force Colonel; Young and Cernan are Navy commanders.

If necessary, the backup crew can be substituted for the prime crew up to about two weeks prior to an Apollo launch. During this period, the flight hardware and software, ground hardware and software, flight crew and ground crews work as an integrated team to perform ground simulations and other tests of the upcoming mission. It is necessary that the flight crew that will conduct the mission take part in these activities which are not repeated for the benefit of the backup crew. To do so would add an additional costly two-week period to the pre-launch schedule, which, for a lunar mission, would require rescheduling for the next lunar window.

The Apollo 10 rendezvous will be the fifth space rendezvous in which Stafford has taken part--Gemini 7/6 and the world's first rendezvous, and three types of rendezvous /with the augmented target docking adapter in Gemini 9.

The Apollo 10 mission time line can be described as a combination of Apollo 8 and Apollo 9 in that it will be a lunar orbit mission with a CSM-LM rendezvous. Apollo 8 was a lunar orbit mission with the command/service module only, while Apollo 9 was an Earth orbital mission with the complete Apollo spacecraft and included a LM-active rendezvous with the CSM.

Apollo 10, after liftoff from Launch Complex 39B, will begin the three-day voyage to the Moon about two and a half hours after the spacecraft is inserted into a 100-nautical mile circular Earth parking orbit. The Saturn V launch vehicle third stage will restart to inject Apollo 10 into a translunar trajectory as the vehicle passes over Australia mid-way through the second revolution of the Earth.

The "go" for translunar injection will follow a complete checkout of the spacecraft's readiness to be committed for injection. About an hour after translunar injection (TLI), the command/service module will separate from the Saturn third stage, turn around and dock with the lunar module nested in the spacecraft LM adapter. Spring-loaded lunar module holddowns will be released to eject the docked spacecraft from the adapter.

Later, leftover liquid propellant in the Saturn third stage will be vented through the engine bell to place the stage into a "slingshot" trajectory to miss the Moon and go into solar orbit.

During the translunar coast, Apollo 10 will be in the so-called passive thermal control mode in which the spacecraft rotates slowly about one of its axes to stabilize thermal response to solar heating. Four midcourse correction maneuvers are possible during translunar coast and will be planned in real time to adjust the trajectory.

Apollo 10 will first be inserted into a 60-by-170 nautical mile elliptical lunar orbit, which two revolutions later will be circularized to 60 nautical miles. Both lunar orbit insertion burns (LOI) will be made when Apollo 10 is behind the Moon out of "sight" of Manned Space Flight Network stations.

Stafford and Cernan will man the LM for systems checkout and preparations for an eight-and-a-half hour sequence that duplicates--except for an actual landing--the maneuvers planned for Apollo 11. The LM twice will sweep within 50,000 feet of Apollo Landing Site 2, one of the prime targets for the Apollo 11 landing.

Maximum separation between the LM and the CSM during the rendezvous sequence will be about 350 miles and will provide an extensive checkout of the LM rendezvous radar as well as of the backup VHF ranging device aboard the CSM, flown for the first time on Apollo 10.

When the LM ascent stage has docked with the CSM and the two crewmen have transferred back to the CSM, the LM will be jettisoned for a ground command ascent engine burn to propellant depletion which will place the LM ascent stage into solar orbit.

The crew of Apollo 10 will spend the remainder of the time in lunar orbit conducting lunar navigational tasks and photographing Apollo landing sites that are within camera range of Apollo 10's ground track.

The transearth injection burn will be made behind the Moon after 61.5 hours in lunar orbit. During the 54-hour transearth coast, Apollo 10 again will control solar heat loads by using the passive thermal control "barbecue" technique. Three transearth midcourse corrections are possible and will be planned in real time to adjust the Earth entry corridor.

Apollo 10 will enter the Earth's atmosphere (400,000 feet) at 191 hours 51 minutes after launch at 36,310 feet-per-second. Command module touchdown will be 1,285 nautical miles downrange from entry at 15 degrees 7 minutes South latitude by 165 degrees West longitude at an elapsed time of 192 hours 5 minutes. The touchdown point is about 345 nautical miles east of Pago Pago, Tutuila, in American Samoa.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-43
May 7, 1969
FOR IMMEDIATE RELEASE

127-4

HOUSTON, TEXAS--Alan B. Shepard, Jr., 45, America's first man in space, has been returned to full aircraft and space-flight status following correction of an inner ear disorder.

Shepard, a Navy captain, was pilot of "Freedom 7" on a suborbital space mission on May 5, 1961. He was removed from spaceflight and solo aircraft status in 1963 when he developed intermittent attacks of dizziness and nausea. The problem was not connected with his 15-minute space flight. Minor surgery was performed on Shepard's ear in May, 1968.

"Shepard's health has remained excellent during the past year, and consultant ear specialists consider his former problem no longer presents a threat of recurring suddenly," reported Dr. Charles A. Berry, Director of Medical Research and Operations at the NASA Manned Spacecraft Center.

"He is, therefore, medically qualified to return to full piloting duty," Dr. Berry said.

Donald K. Slayton, MSC's Director of Flight Crew Operations, said he was happy to have Shepard back on flight status. Slayton said Shepard has not been assigned to a space flight, but that he now joins the group qualified for selection to future flight crews. Crews through Apollo 12 have been named.

-more-

127-5

Shepard, who is chief of the Astronaut Office, has been on dual aircraft flight status for several years. This required him to fly with another pilot. He is now again qualified for solo flights in aircraft.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

MSC 69-44
May 8, 1969

127-2

HOUSTON, TEXAS--The National Aeronautics and Space Administration announced plans to carry an experimental color television system on the Apollo 10 lunar orbit mission scheduled for launch May 18.

The decision to include color TV equipment on Apollo 10 was made following a successful test of the system during the manned portion of the Apollo 10 Countdown Demonstration Test (CDDT) Tuesday. Astronauts Thomas P. Stafford, John W. Young, and Eugene A. Cernan operated the camera from the interior of their Command Module atop its Saturn V launch vehicle at KSC, transmitting TV pictures which were relayed to Houston and converted to color.

Because of the rapid development cycle of the color television system, it is considered to be experimental in nature, and will be flown in addition to the black-and-white system. Approximately 12 opportunities for TV transmissions from Apollo 10 are in the flight plan. However, transmissions may not take place during all of these opportunities, depending on other flight plan activities.

The color system is designed for use in the Command Module only and is not planned for use in the Lunar Module.

The system uses a camera with an overall length, including lens, of about 18 inches. It is about four-and-a-half inches wide and about six-and-a-half inches high and weighs about twelve pounds. The system also includes a three-inch television monitor which can be mounted atop the camera or positioned at a convenient location in the cabin, allowing the astronauts to see a black-and-white view of the picture they are transmitting to earth.

-more-

MSC 69-44
Add 1

The color camera can be hand-held or mounted on brackets, and it is equipped with a zoom-type lens which can be adjusted for close-up or wide-angle views.

The system transmits a sequence of three black-and-white pictures, each seen through a different color filter, for every color frame. The sequences of black-and-white pictures are re-constituted by a converter at the Manned Spacecraft Center into a color picture which can be fed to commercial TV networks.

The color camera was designed and built by the Westinghouse Electric Corporation, Baltimore, Maryland, and uses a color wheel process pioneered by CBS Laboratories. The color camera is similar to the Westinghouse built lunar surface TV camera--a black-and-white system. Color sensitivity is obtained by rotating red, green and blue filters sequentially between the lens and the camera tube.

The impetus for color TV on Apollo 10 came from a demonstration of a promising system developed by Gyro Dynamics Corp., Salt Lake City, Utah. This system uses optical techniques and has no moving parts. Both the Gyro Dynamics system and the color wheel system were evaluated at MSC under conditions simulating TV transmissions from lunar distances. Both appeared to be adaptable for spacecraft use. However, the color wheel system was selected because it could be integrated with a flight worthy camera (the Westinghouse camera) within the short time available before the Apollo 10 flight.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-45
May 9, 1969

HOUSTON, TEXAS--The Mobile Quarantine Facility (MQF) scheduled for use in returning the first lunar landing astronauts to Houston, will arrive by truck at the Manned Spacecraft Center Building 228, Monday morning May 12, 1969.

This will be the first of three modified units arriving by truck in the next few weeks from the manufacturers plant.

The MQF units are fabricated of heat-treated aluminum, with sleeping quarters, work, food preparation and medical areas for the flight crew and support personnel. Each unit is self-sufficient and equipped with bunks, chairs, tables, lavatory, sink and kitchen equipment and other items required in support of debriefing and preliminary medical examinations during the transfer period from the recovery vessel to the Lunar Receiving Laboratory at MSC. Specially prepared and packaged meals will be passed through a special hatch to the crewmen inside the MQF. All waste water and sewage produced during the lunar crew return to Houston will be retained in holding tanks, and all exiting air passes through a high efficiency filtering system.

The first MQF was delivered to MSC on March 6, 1968, under a contract with Melpar, Inc., Falls Church, Va., for four units. Fabrication of the 35-foot long units is by Airstream, Inc., Jackson Center, Ohio. This first unit has been and will continue to be used for systems verification and as a training vehicle by the MSC Landing and Recovery Division.

Modifications to the three remaining MQF's, include fire retardation throughout, redundant oxygen system for use during flight, and replacing slide valves in the waste systems with ball valves.

-more-

MSC 69-45
Add 1

After arrival at MSC, the MQF units will have mission essential hardware installed by LRD. This will include aircraft and shipboard communications equipment, medical hardware and provisions. Each unit when completely outfitted and provisioned will weigh about 12,500 pounds and will be pallet mounted and equipped with a hoisting sling for placement aboard ship or flatbed trailer.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-46
May 14, 1969

HOUSTON, TEXAS--The Manned Spacecraft Center has established a Space Station Task Group to manage contractor and inhouse studies associated with a manned space station and space shuttle.

Major effort of the studies will be preliminary design and planning of a 12-man Earth-orbital space station which could be developed by 1975. The station is envisioned as the initial element of a large space base.

Appointed as task group manager is Rene A. Berglund, 51, who has additional responsibilities as Manager of the Advanced Projects Office--a part of the Advanced Missions Program Office. Named as deputy task group manager is Jack C. Heberlig, formerly Chief of the Planning and Control Office at MSC's Engineering and Development Directorate. Several assistant managers also were named.

A long time National Aeronautics and Space Administration employee, Mr. Berglund joined the staff of the Langley Research Center, Hampton, Virginia, after separation from military service in December, 1945. He remained at Langley with the exception of a five-year period--1947 to 1952--during which he operated his own business.

At Langley he was assigned to a space station office where he was responsible for one of the first research programs looking to a manned space station. Mr. Berglund holds a U. S. patent for space station design. At MSC he has worked in the area of advanced studies and Apollo applications for more than six years.

Berglund was born in Cincinnati, Ohio and attended the University of Pittsburgh. Later he graduated from U. S. Army pilot training and received a second lieutenant rating. He is married to the former Jeanette Diggs of Hampton, Virginia. The Berglunds live in Dickinson, Texas.

-more-

Heberlig, 33, joined NASA at Langley in June 1957. He was one of the original 35 persons assigned to the Manned Spacecraft Center when the task force was formed in 1958. He worked on Project Mercury and received a patent for developing form-fitting couches.

Heberlig was born in Oakville, Pennsylvania and graduated with a BS degree in Physics and Mathematics from Shippensburg (Pennsylvania) State College.

Robert T. Everline will serve as Assistant for the Space Station and J. Thomas Milton has been named as the Assistant for the Logistics Spacecraft.

Representatives from different MSC directorates also have been named to the task group. They will remain with their line organizations providing specialized inputs and coordinating supplementary studies.

Named as assistants with the directorates they represent are: Ralph D. Hodge, Engineering and Development; A. Harry Davidson, Flight Crew Operations; Rodney G. Rose, Flight Operations; Anthony W. Wardell, Flight Safety; Junius B. Fox, Reliability and Quality Assurance Office; Dr. Waylund E. Hull, Medical Research and Operations; Marvin Cohn, Science and Applications, and William M. Chastain, Program Control and Contracts.

The study for which this task force has been named is a 5.8 million dollar effort which will be monitored by two different NASA field centers. One contract--valued at 2.9 million dollars--will be administered by MSC and a second parallel contract will be monitored by the Marshall Space Flight Center, Huntsville, Alabama.

The definition study will last 11 months and contract winners are expected to be announced in late summer.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

MSC 69-47
May 16, 1969

HOUSTON, TEXAS--The crew of Apollo 11, on their return from the Moon, will be transferred to the recovery ship by helicopter, as in past flights, and go immediately into a mobile quarantine facility for the trip by sea and air to Houston.

NASA had considered having the astronauts remain inside the Command Module, while it was hoisted onto the recovery ship, as a precaution against back contamination of the Earth environment by any alien organisms they may have carried home from the Moon.

The decision to retain the helicopter lift was made for the safety of the crew after a review of the loads involved in transferring the Command Module to the deck, particularly in a heavy sea, and of the reliability of shipboard cranes and the capacity of available load-limiting elastic tackle.

The crew will emerge from the Command Module to a raft and there put on biological isolation garments. The isolation suit is made of lightweight fabric that completely covers the wearer and serves as a biological barrier. Built into the hood is an air inlet flapper valve and a high-efficiency air outlet filter.

The procedure preferred by NASA was reviewed by the Inter-Agency Committee on Back Contamination representing the Departments of Agriculture; Health, Education and Welfare (U. S. Public Health Service); and Interior; the National Academy of Sciences; and NASA. The committee agreed that these procedures, together with the methods designed to prevent lunar material from both entering and escaping from the spacecraft, provide the maximum achievable precautions against the possibility of back contamination in the Apollo 11.

-more-

These methods include: Disposal on the Moon under containment conditions of equipment exposed there; brushing, vacuum cleaning and bagging of other equipment and clothing for return; procedures to prevent dust from being transferred from the Lunar Module to the Command Module; and continuous filtering of the atmosphere in the Command Module on the return trip to remove dust particles.

Changes in recovery and transfer procedures are being considered for later Apollo flights.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

June 6, 1969
MSC 69-49

HOUSTON, TEXAS--The Lunar Landing Training Vehicle, a wingless free-flight trainer for simulated Moon landings on Earth, will return to training status Saturday at Ellington Air Force Base.

First astronaut scheduled to fly the trainer since an identical one crashed last December 8 will be Neil A. Armstrong, Commander of the upcoming Apollo 11 lunar landing flight. He has made 12 previous simulated Moon landings in the trainer.

Armstrong's flight, scheduled early Friday or any other day thereafter that weather conditions permit, will be a simple checkout of about five minutes duration at altitudes below 100 feet above ground. He must requalify in the trainer because he has not flown it for many months.

The LLTV returns to training flight operations following a series of test flights, studies and modifications developed, since the crash, by an investigating board headed by Astronaut Walter M. Schirra, Jr. The flight tests were part of the investigation-improvement program.

Aerodynamic, or wind forces--which do not occur on the airless Moon--were cited by the accident board as the primary cause of the crash of the LLTV. Because the trainer must fly in the Earth's environment of shifting and changing winds, its control system proved inadequate when winds above ground level became stronger than anticipated.

The aerodynamic studies and test flights provided engineers with data on the vehicle's performance limitations in various conditions of the flight environment, including wind, attitude, controls and performance. Astronauts will now fly within more stringent limitations and their flights will be made only on specific flight profiles that have been verified by the tests.

-more-

In addition, the control system has been made more effective by increasing thrusters output from 60 to 90 pounds. Cockpit instruments have been improved to give pilots better information about airflow and control indications.

The ground control van has been augmented with more complete data on the vehicle's performance in flight, and wind speed and direction are being measured in more detail at altitudes up to 1000 feet.

The LLTV has been flown only by MSC test pilots since the accident last December. They made a series of flights to obtain and verify aerodynamic data on the vehicle's behavior in various environmental conditions such as wind, altitude and performance.

The pilot involved in the crash, Joseph S. Algranti, escaped without serious injury, by ejecting his seat just before the crash.

The LLTV's, used to simulate the last several hundred feet of descent to the lunar touchdown, have a combination propulsion system. Primary support for the vehicle is provided by a 4200 pound thrust turbofan engine, mounted for vertical flight, and counteracting five-sixths of its weight to simulate the gravity field of the Moon. Two 500-pound thrust rockets sustain the other one-sixth of the vehicle's weight.

Controls and some other system displays are similar to the Lunar Module which astronauts will land on the Moon, but the LLTV carries only one pilot instead of two and is otherwise different because it is designed for flight on Earth and not on the Moon.

Safety experts and flight and engineering officials of NASA's Office of Manned Space Flight determined that the LLTV is valuable for astronaut training. They pointed out that it provides dynamic experience in the final portion of the landing approach. The accident was determined to have no adverse implications for the Lunar Module design or operations.

MSC 69-49
Add 2

A NASA Headquarters Review Board, first appointed to study the crash of a similar vehicle in May 1968, was reconvened to go over its findings in view of the LLTV crash. That board determined that its orginal findings are still valid, and generally agreed with the findings of the Schirra Board.

In addition to the LLTV, astronauts train from Moon landings in a ground simulator at Houston and in another flight facility at NASA's Langley Research Center, in Hampton, Virginia. The Langley Lunar Landing Research Facility has a rocket landing and control system duplicating the Lunar Module and lift rocket engines to sustain flight, but it is tethered to an overhead crane to provide the lunar gravity.

The Facility is limited, however, by the supporting crane structure, so that simulated Moon landing descents can begin no higher than 120 feet.

The LLTV is manufactured by Bell Aerosystems, Textron Co., Buffalo, New York.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas
483-5111
June 10, 1969
MSC 69-50

HOUSTON, TEXAS--Dr. William E. Thornton's graduation from scientist-astronaut jet pilot training has been delayed by an eye problem.

He has been temporarily grounded but is expected to resume flight training at Randolph Air Force Base, San Antonio, Texas, within about ten days.

Evaluation of Dr. Thornton's vision indicated that he should be fitted with specially designed eyeglasses to enable him to achieve the degree of stereoscopic vision required for some pilot training maneuvers. Wearers of this type of glasses require four to six weeks to adjust to them and be able to use them effectively.

Dr. Thornton is grounded during the adjustment period. He was in the T-38 aircraft phase of the program when he was grounded. A training completion date has not yet been determined. The 40-year-old medical doctor is a member of the scientist-astronaut group selected in August, 1967.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas
483-5111
June 12, 1969

RELEASED BY NASA HEADQUARTERS

The National Aeronautics and Space Administration is continuing preparations leading to the planned launch of Apollo 11 on July 16 for the first manned lunar landing attempt.

The decision to proceed on the schedule leading to the July mission is based on a review of the current status and remaining training schedule for the Apollo 11 astronauts and the ground flight control team, the current status and readiness for upcoming preparations and tests of the space vehicle and associated ground support equipment at Cape Kennedy and the final analysis and resolution of the Apollo 10 mission anomalies.

Crew for the Moon landing mission is Neil Armstrong, spacecraft commander; Michael Collins, command module pilot; and Edwin E. Aldrin, lunar module pilot.

The mission plan calls for Astronauts Armstrong and Aldrin to land on the Moon July 20 and for Armstrong to be the first man to set foot on the Moon as he leaves the lunar module in the early morning hours (eastern daylight time) of July 21. Aldrin will follow Armstrong out on the surface about 30 minutes later.

In announcing the decision to proceed with plans to launch Apollo 11 July 16, Lt. Gen. Sam C. Phillips, Apollo Program Director, pointed out that there are several major milestones to pass before launch.

These include space vehicle hypergolic loading beginning June 16th or 17th; first stage fuel loading June 23; command module ordnance installation June 24; countdown demonstration test (wet) June 25-July 2; terminal countdown demonstration (dry with crew aboard) July 3; and the space vehicle countdown July 10-16.

-more-

In the crew training area, the Apollo 11 astronauts still have to review flight program notes and anomalies, back contamination procedures, photo and camera operations, have a final spacecraft systems briefing and review mission rules. They also will participate in the countdown demonstration test, run spacecraft and mission control simulations, and undergo several special purpose training exercises.

These special purpose training activities include a back contamination walk-through, suiting and unsuiting in command module, lunar surface operation preparations and walk-throughs, bench checks and Lunar Landing Training Vehicle flights.

The review of the Apollo 10 mission included study of several anomalies which occurred during the flight.

--In Apollo 10 the lunar orbital plane did not regress as expected and resulted in the lunar module making its low passes over landing site number 2 farther south than was expected. Apollo 11 will be flown at the same orbital inclination as was Apollo 10. This will enable flight control to bias the orbit to allow for the variation in orbital motion that was encountered on Apollo 10. This is expected to bring the lunar module well within the propellant capacity to carry out its powered descent.

--The docking tunnel problem was found to be the result of a wrong fitting on the tunnel pressurization dump line. The Apollo 11 tunnel has been inspected and tested to insure that the correct fitting is installed.

--The fiberglas insulating material on the docking tunnel hatch of the command module has been removed to eliminate the possibility of the material escaping into the lunar module and command module as it did on Apollo 10.

--The problem which resulted in an unexpected change in attitude of the lunar module at the time of staging in Apollo 10 has been associated with switch circuitry in the abort guidance system which provides a backup for the lunar module primary guidance. The use of the backup guidance system during the Apollo 10 mission was a deliberate test to provide flight experience and data in this mode of operation. Although this anomaly did not jeopardize crew safety and the normal mode of operation is to use the primary guidance and navigation system, analysis to determine exact cause of this anomaly is continuing and we are confident that it will be resolved prior to the Apollo 11 mission.

--Vibrations encountered in the Apollo 10 S-IVB powered flight and translunar injection operation are well within the limits of safety. Instrumentation and continuous telemetry provisions are being installed on Apollo 11 S-IVB to get information if these vibrations occur on the mission.

"At any time between now and launch on July 16, we will not hesitate to postpone if we feel we are not ready in every way," General Phillips said. "Nor, once the voyage has begun, would we hesitate to bring the crew home immediately if we encounter problems."

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111
Hometown Release

MSC 69-51
June 17, 1969

HOUSTON, TEXAS--Mrs. LaRue W. Burbank, (daughter of Mr. and Mrs. Gus Wilson, Sr. of New Bern, North Carolina) (daughter-in-law of Mr. and Mrs. Cuban F. Burbank of Corpus Christi, Texas), was cited recently by the National Aeronautics and Space Administration as the Agency's nominee for the 1968 Federal Woman's Award.

Mrs. Burbank, who is Technical Assistant to the Chief of the Systems Engineering Branch at the NASA Manned Spacecraft Center, Houston, Texas was nominated for her work in developing and placing in operation the displays used by flight controllers in the Mission Control Center to monitor and control manned space vehicles.

In nominating Mrs. Burbank for the award, NASA cited her outstanding contribution to the United States Manned Space Flight Program in the Gemini and Apollo Programs. Her efforts, said NASA, have led to major improvements in equipment and operations in the Mission Control Center, a facility that is the keystone of the worldwide Manned Space Flight Network of tracking, data and communications stations.

Mrs. Burbank, formerly LaRue Wilson, and her husband Paige have a daughter, Lisa LaRue, age 7. Mrs. Burbank graduated MAGNA CUM LAUDE from the University of North Carolina at Greensboro (formerly the Woman's College of the University of North Carolina) with a B. A. degree in mathematics and physics.

She joined NASA in 1954, working for the Data Reduction Branch, Instrument Research Division at the Langley Research Center, Hampton, Virginia.

She has been with the NASA Manned Spacecraft Center since 1962.

Mrs. Burbank was one of two women named by the National Aeronautics and Space Administration to compete for the Federal Woman's Award, which is presented annually on the basis of outstanding ability and achievement in an executive, professional, scientific or technical position with the federal government.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-52
June 25, 1969

HOUSTON, TEXAS--Astronaut James A. McDivitt has been named Manager for Lunar Landing Operations in the Apollo Spacecraft Program Office, the NASA Manned Spacecraft Center announced today.

McDivitt, 40, will be responsible for planning lunar landing missions subsequent to the first landing. Emphasis will be on landing site selection, mission planning, and requirements for spacecraft modifications to achieve mission objectives.

He will report to George M. Low, Apollo Spacecraft Program Manager.

McDivitt, a colonel, will remain in the Air Force, however, the new position removes him from consideration for spaceflight crew assignments.

A member of the second group of astronauts selected in September, 1962, McDivitt commanded the four-day Gemini IV mission in June, 1965, and the ten-day Apollo 9 flight in March, 1969. Apollo 9 was the first manned flight of the lunar module and included the first rendezvous of a lunar module with a command and service module.

He is married and has four children.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-53
July 2, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration today announced the award of a one-year contract to Federal Electric Corporation, Houston, Texas for support services at the Manned Spacecraft Center.

The cost-plus-award/incentive-fee contract has an estimated value of about $4.1 million.

Under the contract, Federal Electric Corporation will be responsible for real-time mission support, flight control documentation, technical editing and writing, engineering documentation, library materials processing, graphic illustrations, satellite quick-copy operation, microform services, publications and forms distribution, supply function, and moving and hauling services for the Manned Spacecraft Center.

The contract provides direct and indirect support to all administrative operations and research and developement programs at the center for a one year period beginning June 1, 1969.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

July 2, 1969

Released by NASA Headquarters

When Astronauts Neil A. Armstrong and Edwin E. Aldrin, Jr., lift-off from the Moon after their lunar exploration July 21 they will leave behind three items in commemoration of the historic event.

Armstrong will unveil a plaque attached to the descent stage of the Apollo lunar module. The plaque is signed by President Richard Nixon and the three Apollo 11 astronauts -- Armstrong, Michael Collins and Aldrin.

The plaque bears image of the two hemispheres of the Earth and this inscription:

HERE MEN FROM THE PLANET EARTH

FIRST SET FOOT UPON THE MOON

JULY 1969, A.D.

WE CAME IN PEACE FOR ALL MANKIND

Another memorial to be left on the Moon will be a 1 and 1/2-inch silicon disc bearing messages of goodwill from heads of state of many nations. The messages will be deposited on the wafer using the technique of making microcircuits for electronic equipment. The National Aeronautics and Space Administration invited the heads of nations to submit messages for this purpose.

The third item is the flag of the United States of America which will be erected on the Moon.

-more-

The flag is three by five feet and is made of nylon. It will be erected on an eight-foot aluminum staff and a tubing along its top edge will unfurl it in the airless environment of the Moon. Plans are for the event to be recorded on television and transmitted live to Earth.

The planting of the flag is symbolic of the first time man has landed on another celestial body and does not constitute a territorial claim by the United States.

In addition, the Apollo 11 crew will carry four-by-six inch flags of other nations of the world, the 50 states, District of Columbia and territories of the United States and the United Nations. These flags will be carried in the lunar module and brought back to Earth. They will not be deployed on the Moon.

Two other United States flags will be flown in the Apollo 11 command module. These measure five by eight feet and are to be presented to the two Houses of the Congress of the United States upon return to Earth. They were flown over the U.S. Capitol before the mission and will be flown again over the Capitol after their return.

The plaque is made of stainless steel measuring nine by seven and five-eights inches and one-sixteenth inch thick. The finish has the appearance of brushed chrome and the world map, message and signatures are in black epoxy which fills the etched inscription.

It will be attached to the ladder on the landing gear strut. The plaque will be between the third and fourth ladder rungs from the bottom.

To fit properly around but not touching the strut and to allow room for the insulation material which covers much of the lunar module, the plaque will be bent around a four-inch radius.

Covering the plaque during flight will be a thin sheet of stainless steel which will be removed by Armstrong during his activities on the surface of the Moon.

The plaque was made at NASA's Manned Spacecraft Center, Houston.

The disc upon which the messages of good will from heads of state will be carried is being made by the Sprague Electric Co., Semiconductor Division, Worcester, Mass., under the direction of NASA's Electronics Research Center, Cambridge, Mass.

The process used to make this wafer is the same as used to manufacture integrated circuits for electronic equipment. It involves making tiny photographic images and depositing metal on the images.

The Stars and Stripes to be deployed on the Moon was purchased along with several others made by different manufacturers at stores in the area around the Manned Spacecraft Center near Houston.

In order to attach the flag properly to its aluminum staff it was necessary to remove the binding and labels. For this reason the name of the manufacturer cannot be determined.

For its journey to the Moon, the flag will be wrapped in plastic and carried in a thin aluminum container attached to the left side ladder down which Astronauts Neil A. Armstrong and Edwin E. Aldrin will climb from their lunar module to the surface of the Moon.

It will be erected after both astronauts step on the Moon and several feet away from the landing spacecraft sufficiently distant to minimize damage from the spacecraft's rocket engine as it leaves the Moon on its return trip to Earth.

Armstrong will erect the flag as Aldrin photographs the event. First Armstrong will stick the lower four-foot section of the aluminum staff in the ground. He will then swing out a telescoping tube which runs along the top of the flag to keep it unfurled.

The flag is riveted at its top two corners to this tube and is attached at its lower corner to the top portion of the staff. When the flag is properly unfurled, Armstrong then will slide the top portion of the staff into the bottom portion which is stuck in the ground.

The aluminum staff and tube which holds the flag unfurled is gold in color.

The flag during its journey to the Moon will be wrapped in several layers of insulating blanket and attached by two brackets to the left handrail of the ladder. The packaged flag extends from the first step of the ladder upward to where the ladder bends inward toward the lunar module.

The flag and staff are removed from the stowage position by pulling retaining pins as the astronaut stands on the Moon's surface.

Weight of the flag and its wrappings is nine pounds, seven ounces. The flag and its staff and deploying tube weigh three pounds. The upper four-foot section of the staff slips into the bottom section for four inches making the length of the assembled staff seven feet eight inches. The staff will be stuck into the lunar surface from six to nine inches.

The small flags are packaged in a plastic vacuum pack and stowed in a Beta cloth pouch with a Teflon outer wrap. Total weight is 10 ounces.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-54
August 1, 1969

HOUSTON, TEXAS--Dr. Wilmot N. Hess, Director of Science and Applications at the NASA Manned Spacecraft Center, has accepted a position with the Environmental Sciences Service Administration.

Dr. Hess will be the director of Research Laboratories of the ESSA at Boulder, Colorado. He will assume his new duties in September. His successor at MSC has not yet been selected.

In his new position Dr. Hess will be in charge of the research program of 12 ESSA laboratories located in the USA. This program encompasses meteorology, oceanography, aeronomy, earth sciences, research on hurricanes and other severe storms, and also other scientific disciplines.

Dr. Hess has held the position of Director of Science and Applications at the Manned Spacecraft Center for the past two years. Prior to joining MSC he served as Chief of Laboratory for Theoretical Studies at Goddard Space Flight Center, Greenbelt, Maryland, from 1961 until 1967.

In announcing his decision to transfer to the ESSA, Dr. Hess said his new post is very interesting and a most challenging job in a new and growing organization with an important mission. He said, "We have passed a milestone in the manned space flight program by the recent lunar landing. We have put the Lunar Receiving Laboratory into operation and it is performing its mission well. We have placed instruments on the moon successfully and have the scientific program for the next several lunar missions well organized."

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MSC 69-54
Add 1

Prior to joining the NASA at the Goddard Space Flight Center in 1961, Dr. Hess was associated with the Plowshare Division of University of California Lawrence Radiation Laboratory 1959-61; physics instructor Oberlin College 1948-1949; physics instructor Mohawk College 1947. BS in electrical engineering from Columbia University 1946; MA in physics from Oberlin College 1949; and PhD in physics from University of California 1954.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

488-5111

MSC 69-55

August 5, 1969

HOUSTON, TEXAS--Dr. F. Curtis Michel, 35, has resigned from the astronaut program effective August 18, the National Aeronautics and Space Administration announced today.

In his letter of resignation to Donald K. Slayton, Director of Flight Crew Operations at MSC, Michel cited his desire to devote more time to scientific research and his belief that a spaceflight opportunity for him was distant.

He observed that the prospect of a flight was still a strong motivation and that he was reluctant to leave. He said that the Astronaut Office has been generous in trying to help him devote more time to scientific work, and noted, "I see no further request that I can reasonably make."

Michel has been on a year's leave of absence from NASA to pursue his scientific interests at Rice University, Houston. He was a faculty member there when he was named an astronaut, and he said he plans to remain at Rice. He said he submitted his resignation with regret, and he told Slayton, "You can always count on me for whatever support I can offer as a private citizen."

Slayton said he regretted Michel's decision, but that he understood the scientist's desire to devote full time to research.

Michel was in the first group of scientist-astronauts selected in June 1965. An Air Force veteran, he is one of two in that group who were rated jet pilots prior to selection as astronauts. A physicist, Michel was assigned to the Apollo Applications area of the Astronaut Office prior to his leave of absence. His resignation reduces the total number of NASA astronauts to 48.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-56
August 6, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration today named flight crews for Apollo missions 13 and 14.

Prime crewmen for Apollo 13 are Astronauts James A. Lovell, Jr., commander; Thomas K. Mattingly II, command module pilot; and Fred W. Haise, Jr., lunar module pilot.

Apollo 14 prime crewmen are Astronauts Alan B. Shepard, Jr., commander; Stuart A. Roosa, command module pilot; and Edgar D. Mitchell, lunar module pilot.

The backup crew for Apollo 13 is composed of Astronauts John W. Young, John L. Swigert, Jr., and Charles M. Duke, Jr.

Backup crewmen for Apollo 14 are Astronauts Eugene A. Cernan, Ronald E. Evans, and Joe H. Engle.

Members of the support team for the Apollo 13 crew are Astronauts Jack R. Lousma, William R. Pogue, and Vance D. Brand. A support team for Apollo 14 has not yet been named.

Both missions include lunar landings and exploration. Landing sites for Apollos 13 and 14 are expected to be selected this fall. Prime consideration in site selection will be to meet scientific objectives within

-more-

operational capabilities. Continued exploration of the moon's surface will lead to sites more difficult to reach operationally.

Apollo Lunar Surface Experiment Packages (ALSEP) will be deployed on each mission, extending the network of scientific experiments on the moon's surface. In addition, objectives will include the study of dark, mantling material on the moon, volcanic processes, and age dating.

Total lunar surface stay time will not exceed 35 hours. The commander and lunar module pilot will conduct two periods of extra-vehicular activity (EVA) on each mission. Duration of each EVA period will be approximately three hours.

Lovell, 41, is a Navy captain. This will be his fourth space mission. Previous flights include Geminis 7 and 12 and Apollo 8. He was backup commander for Apollo 11.

Mattingly, 33, a Navy lieutenant commander, has not yet flown in space. He has served on support teams for Apollo missions.

Haise, 35, is a civilian. He was on the backup crew for Apollos 8 and 11. Apollo 13 will be his first space flight.

Shepard, 45, a Navy captain, was the United State's first man in space. He flew Freedom 7, in a suborbital mission in Project

Mercury on May 5, 1961. He recently returned to spaceflight status after being grounded for several years because of an inner ear disorder. Shepard's duties as Chief of the Astronaut Office have been assumed by Col. Thomas P. Stafford.

Roosa, 35, is an Air Force major who will be making his first space flight. He has served on Apollo support teams.

Mitchell, 38, is a Navy commander. This will be his first space flight. He was on the Apollo 10 backup crew.

Young, 38, a Navy commander, flew Geminis 3 and 10 and Apollo 10.

Swigert, 37, a civilian, has served on Apollo support teams.

Duke, 33, an Air Force major, has been a member of Apollo support teams.

Cernan, 35, a Navy commander, has flown in space twice--Gemini 9 and Apollo 10.

Evans, 35, is a Navy lieutenant commander. He has served on Apollo support teams.

Engle, 36, is an Air Force major who earned astronaut wings by piloting the X-15 rocket plane higher than 50 miles prior to joining the NASA program. He has served on Apollo support teams.

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Lousma, 33, a Marine Corps major; Pogue, 39, an Air Force lieutenant colonel; and Brand, 38, a civilian, have served on support teams previously.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-57
August 8, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration has signed two supplemental agreements with Grumman Aerospace Corporation, Bethpage, N. Y., for changes in the Apollo lunar module contract.

The first, valued at $5,096,000 formally incorporates 76 changes previously authorized by NASA in Grumman's documentation and reporting procedures for test and checkout of the lunar module, modification to flight and ground test hardware, additional test and effect analysis and for crew safety hardware changes.

The second, valued at $69,776,000, incorporates 68 changes and includes adjustments to the contract delivery schedules because of these changes.

The modifications in the contract bring the total estimated value of the Grumman lunar module contract to $1,632,660,320.

Grumman performs most of the work on the lunar module contract at its Bethpage facility with support from its field offices in Houston, White Sands, N. M., and Kennedy Space Center, Fla.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-58
August 13, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration is assigning seven of the Air Force Manned Orbiting Laboratory astronauts to its astronaut program and an eighth to non-astronaut duty in its Flight Crew Operations Directorate. Effective date of the new assignment has not been set.

The seven assigned to the NASA Astronaut Program are:

Major Karol J. Bobko, USAF, 32, an Air Force Academy graduate from Seaford, New York.

Lt. Commander Robert L. Crippen, US Navy, 32, Porter, Texas.

Major Charles G. Fullerton, USAF, 31, Portland, Oregon.

Major Henry W. Hartsfield, Jr., USAF, 35, Birmingham, Ala.

Major Robert F. Overmyer, US Marine Corps, 33, Westlake, Ohio.

Major Donald H. Peterson, USAF, 35, US Military Academy graduate from Winona, Mississippi.

Lt. Commander Richard H. Truly, US Navy, 32, Meridian, Mississippi.

Three of the group will complete studies for graduate degrees before assuming their new astronaut duty: Major Bobko, master's degree in astro-physics, University of California; Major Hartsfield, master of science, University of Tennessee; and Major Peterson, doctorate in physics, University of Tennessee.

Lt. Col. Albert H. Crews, USAF, from Alexandria, Louisiana, has been assigned to the NASA-MSC Flight Crew Operations Directorate. In addition to his MOL training, Col. Crews had also trained for space flight in the Air Force Dyna Soar Program.

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MSC 69-58
Add 1

Three groups of pilots had been selected for the MOL program in 1965, 1966, and 1967. The crew members, in addition to their flight training, also performed research and development engineering duty. The program was terminated on June 10.

The seven additions will bring the total number of active NASA astronauts to 54.

###

MAJOR CHARLES G. FULLERTON

NASA Astronaut

Maj. Charles G. Fullerton, U.S. Air Force, was one of the second group of Aerospace Research Pilots assigned to the USAF's Manned Orbiting Laboratory Program. Maj. Fullerton was born in Rochester, New York on 11 Oct. 1936. He is the son of Mr. and Mrs. Charles R. Fullerton, Salem, Oregon.

After graduation from U.S. Grant High School, Portland, Oregon, he earned bachelor of science and master of science degrees in mechanical engineering at the California Institute of Technology. Prior to his assignment to active duty, he worked as a mechanical design engineer for the Hughes Aircraft Company, Culver City, California.

His Air Force assignments include duty as a Strategic Air Command B-47 jet bomber pilot. He has logged over 4,000 hours in the following jet aircraft: T-34, T-37, T-33, T-38, T-39, F-86, F-104, F-106, B-47, and KC-135.

Maj. Fullerton is a graduate of the Aerospace Research Pilot School, Edwards Air Force Base, California, and was a flight test officer assigned to the Aeronautical Systems Division, Wright-Patterson Air Force Base, Ohio, prior to his assignment to the MOL Program.

Maj. Fullerton is married to the former Marie J. Buettner of Delphos, Ohio.

###

LIEUTENANT COMMANDER RICHARD H. TRULY

NASA Astronaut

Lt. Cdr. Richard H. Truly, U.S. Navy, was one of the first group of Aerospace Research Pilots assigned to the USAF Manned Orbiting Laboratory Program. Cdr. Truly was born in Fayette, Miss., November 12, 1937. He is the son of Mr. James B. Truly, Alexandria, Va., and Mrs. S. S. Truly, Meridian, Miss.

Cdr. Truly earned a bachelor of Aeronautical Engineering Degree at Georgia Institute of Technology in 1959. At this time, he also received his commission through the Naval Reserve Officer Training Corps (NROTC) Program.

With over 2,500 flying hours in jets, he has flown the F-11, F-8, F-104, and F-106. Much of this time was amassed while operating from the USS Intrepid (CVS 11) and the USS Enterprise (CVA (N) 65). He has over 300 carrier landings to his credit.

Truly is a graduate of the Aerospace Research Pilot School, Edwards Air Force Base, California, and has been assigned there as an instructor.

He is married to the former Colleen Hanner of Rutledge, Georgia. They have three children: Richard M., 8; Daniel B., 5; and Lee Margaret, 4.

###

MAJOR ROBERT F. OVERMYER

NASA Astronaut

Maj. Robert F. Overmyer, U.S. Marine Corps, was the first marine to be selected as an Aerospace Research Pilot for the USAF Manned Orbiting Laboratory Program. He was born in Lorain, Ohio July 14, 1936. He is the son of Mrs. Rolandus Overmyer, Lomita, California.

After graduation from Westlake High School, Westlake, Ohio, Maj. Overmyer earned a bachelor of science degree in physics at Baldwin-Wallace College, Berea, Ohio, and a master of science degree in aeronautics at the U.S. Naval Post Graduate School, Monterey, California.

His previous assignments included flying FJ4B and A4B jet fighter bombers with Marine Attack Squadron 214 in Hawaii, and duty with the 1st Marine Aircraft Wing in Japan. He has logged over 2,500 flying hours of which 2,000 were in jet aircraft.

Maj. Overmyer graduated from the Aerospace Research Pilot School, Edwards Air Force Base, Calif., just prior to his assignment to the MOL Program.

He is married to the former Katherine E. Jones of Greensburg, Pa., who shares her husband's enthusiasm for flying. She has a private pilot's license. They have two daughters, Carolyn Marie and Patricia Ann.

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LIEUTENANT COMMANDER ROBERT L. CRIPPEN

NASA Astronaut

Lt. Cdr. Robert L. Crippen, U.S. Navy, was one of the second group of Aerospace Research Pilots assigned to the USAF Manned Orbiting Laboratory Program. Lt. Cdr. Crippen was born in Beaumont, Texas Sept. 11, 1937. He is the son of Mr. and Mrs. Herbert W. Crippen, Porter, Texas.

Lt. Cdr. Crippen is a graduate of New Cancy High School, Texas, and of the University of Texas where he earned a bachelor of science degree in aerospace engineering.

His previous assignments include two and one-half years of duty aboard the aircraft carrier USS Independence as a fighter pilot. He has logged over 2,000 flying hours, 1,800 of these in jet aircraft.

A graduate of the Aerospace Research Pilot School, Edwards Air Force Base, Calif., Lieutenant Crippen served as an instructor there prior to his assignment to the MOL program.

He is married to the former Virginia E. Hill of Corpus Christi, Texas. They have three children: Ellen Marie, 7; Susan Lynn, 4; and Linda Ruth, 2.

LIEUTENANT COLONEL ALBERT H. CREWS

Lt. Col. Albert H. Crews, Jr., U.S. Air Force, was one of the first group of Aerospace Research Pilots assigned to the USAF Manned Orbiting Laboratory Program. Col. Crews was born in El Dorado, Ark., March 23, 1929. He is the son of Mr. and Mrs. Albert H. Crews, Alexandria, La.

He received a bachelor of science degree in chemical engineering from the University of Southwestern Louisiana and a master of science degree in aeronautical engineering from the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio.

Col. Crews began his Air Force career in 1950 and received his commission and pilot wings in 1952. With over 5,000 flying hours, his flying has included the following aircraft: T-38, F-100, F-101, F-104, and F-106. His assignments include experimental test pilot work on the F-5, F-104 and T-38. He was also selected as one of the pilots for the DynaSoar (X-20) Program which was cancelled in 1963.

A graduate of the Aerospace Research Pilot School, Edwards Air Force Base, Calif., Col. Crews has also served as an instructor there.

He is married to the former Grace A. Marino of Lecompte, Louisiana. They have three children, Gail, 16; Marina, 15; and Kellee, 9.

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MAJOR HENRY W. HARTSFIELD, JR.

NASA Astronaut

Maj. Henry W. Hartsfield, Jr., U.S. Air Force, was one of the second group of Aerospace Research Pilots assigned to the USAF Manned Orbiting Laboratory Program. Maj. Hartsfield was born in Birmingham, Ala., Nov. 21, 1933. He is the son of Mrs. Pete M. Moore, Pinson, Ala.

Hartsfield graduated from West End High School, Birmingham, Ala. and earned a bachelor of science degree in physics at Auburn University. He has done graduate work in physics at Duke University and in astronautics at the Air Force Institute of Technology, Ohio.

His assignments included a tour with the 53rd Tactical Fighter Squadron, Bitburg, Germany. He has logged over 2,700 flying hours of which 2,300 were in in jet fighters: F-86, F-100, F-104, F-105, and F-106.

A graduate of the Aerospace Research Pilot School, Edwards Air Force Base, Calif., Hartsfield served as an instructor there prior to his assignment to the MOL program.

He is married to the former Frances Massey of Princeton, North Carolina. They have two daughters: Judy Lynn, 11; and Keely, 10.

###

MAJOR DONALD H. PETERSON

NASA Astronaut

Maj. Donald H. Peterson, U.S. Air Force, was one of the third group of Aerospace Research Pilots assigned to the USAF Manned Orbiting Laboratory Program. He was born October 22, 1933, the son of Mr. and Mrs. Henry W. Peterson, Winona, Miss.

Peterson is a graduate of Winona City High School and of the U. S. Military Academy at West Point. He earned a master's degree in nuclear engineering at the Air Force Institute of Technology, Wright Patterson Air Force Base, Ohio.

His previous assignments include four years as a military flight instructor and training officer in the Air Training Command, and three years as a Nuclear Systems Analyst with the Air Force Systems Command.

He is a senior pilot with over 2,770 flying hours, over 2,400 of these in jet aircraft. He is a graduate of the Aerospace Research Pilot School, Edwards Air Force Base, Calif.

He holds the Air Force Commendation Medal.

Major Peterson is married to the former Bonnie R. Love of Coffeeville, Miss. They have three children: Donald H., Jr., 11; Jeanne M., 10; and Sharie L., 7.

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MAJOR KAROL J. BOBKO

NASA Astronaut

Maj. Karol J. Bobko, U.S. Air Force, is the first Air Force Academy graduate to be assigned to a manned space flight program. He was an Air Force Manned Orbiting Laboratory aerospace pilot before his assignment to NASA. Maj. Bobko was born in New York, New York, December 28, 1937. He is the son of Mr. and Mrs. Charles P. Bobko, Seaford, N.Y.

Maj. Bobko earned a bachelor of science degree as a member of the 1959 Air Force Academy class, the first to graduate from the new academy.

His previous assignments include two tours of duty with Tactical Air Command units flying F-100 and F-105 jet fighters. He has logged over 2,100 flying hours in the F-100, F-105, T-38, T-33 and F-104.

Maj. Bobko graduated from the Aerospace Research Pilot School, Edwards Air Force Base, Calif., just prior to his assignment to the MOL program.

He is married to the former Frances D. Welsh of Denver, Colo. They have two children, Michelle Ann, 6; and Paul J., 3.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-59

August 25, 1969

HOUSTON, TEXAS--Measurements of the gases in lunar samples have recently been made in the LRL using mass spectroscopy by Dr. Oliver Schaeffer and Dr. John Funkhouser of State University of New York, Dr. Joseph Zahringer of the Max Planck Institute, Heidelberg, Germany, and Dr. David Bogard of MSC.

The rare gases in lunar rocks indicate that this material was formed early in the history of the solar system and is as old as the oldest rocks dated from the earth's crust. The rare gases also indicate that some of these rocks have been exposed to cosmic rays on the surface of the moon for up to hundreds of millions of years.

Most of the material returned from the moon by the Apollo 11 astronauts contains large amounts of solar wind gases. These gases are essentially boiled off from the sun and are caught in the crystal lattice of the lunar material. The earth's magnetic field keeps the relatively low-energy solar particles away from the earth. However, the moon, without a magnetic field, allows the particles to be captured.

Several crystalline rocks from the moon have been found which contain considerably less solar wind particles than most of the material studied so far. In these rocks the decay products from natural radioactive elements as well as the cosmic ray produced nuclei are clearly identifiable and are not overshadowed by the solar wind particles, thereby enabling the investigators to estimate certain ages.

These age estimates are important in understanding the origin of the moon and the solar system. The old age of billions of years for the crystalline rocks indicates that the Sea of Tranquility was formed early in the history of the solar system.

The time these rocks were lying within a meter of the moon's surface is unexpectedly large indicating that the lunar surface undergoes changes very slowly.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

August 27, 1969
MSC 69-60

HOUSTON, TEXAS--George S. Trimble, deputy director of the Manned Spacecraft Center, today announced his plans to leave his post at MSC effective September 30.

In making his plans known, Mr. Trimble said that he has made no decision as to future employment. No replacement has been named yet to the position of deputy director.

"I will miss the people at the center. I've never enjoyed myself so much working with such beautiful and talented people. I felt that I've been able to contribute more and get more done in a short period than in any previous assignment," Trimble said.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

September 9, 1969
MSC 69-61

HOUSTON, TEXAS--The NASA Manned Spacecraft Center has awarded a one year contract extension to the Lockheed Electronics Company, Division of Lockheed Aircraft Corporation for general electronic, instrumentation, and engineering support services at the Center.

The cost plus award fee contract represents the fifth year of an approved five year program initially awarded to Lockheed Electronics Company.

The one year extension is valued at about $14.6 million and brings the total estimated value of the contract since September 1965 to about $61 million.

Services to be performed under the contract include operational support in the areas of space and electronic systems, information systems, guidance and control, earth resources, space physics, mapping sciences and lunar and earth sciences. The contract provides operational support of facilities in the Engineering and Development and the Science and Applications Directorate.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

September 12, 1969
MSC 69-62

HOUSTON, TEXAS--Distribution of about 18 pounds of Moon rocks and dust to scientific investigators around the world began today at the National Aeronautics and Space Administration's Manned Spacecraft Center, near Houston, Texas.

Lunar samples collected by the Apollo 11 astronauts will go to 106 principal investigators in the United States and 36 in eight other countries for analyses in university, industrial, and government laboratories.

The 4.2 Kilograms of fine materials and chips and slices of about 30 rocks totaling 4 Kilograms are being distributed for first-generation experiments. This makes up about one-third of the lunar materials returned from man's first lunar landing.

Another 15 per cent will be kept as examples of the types of material returned from Tranquility Base, where the Apollo 11 Lunar Module landed July 20. The rest will be held for later scientific experiments, from which a small amount may be available on temporary loan for public display.

Since its return in sealed containers on July 25, all the material has been under quarantine in the Lunar Receiving Laboratory at the Manned Spacecraft Center where tests on animal and plant life have shown no bad effects. Release of the samples was approved by the Interagency Committee on Back Contamination, set up to review NASA safeguards against the possibility of contamination of the Earth by alien organizisms brought back from the Moon.

Preliminary examinations in the Lunar Receiving Laboratory have disclosed that there are two basic rock types: 1) compacted lunar soil and 2) igneous rocks. The preliminary examination has shown that the rocks have been laying on the lunar surface from 10 - 150 million years. The igneous rocks crystallized from 3 - 4 billion years ago.

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Each of the principal investigators or his representative must personally accept his sample at the Lunar Receiving Laboratory, and his plans for safeguarding the material must have been approved by Manned Spacecraft Center administrative, scientific, and security officials.

Of the 8.2 Kilograms of samples being distributed, approximately 3 Kilograms will be destroyed in the course of the planned experiments; the residues and the remaining 5.1 Kilograms will be returned to NASA. Investigators plan to report results of their analyses early next year.

The types of investigation carried on by the principal investigators include almost every type of measurement that has been made on terrestrial igneous rocks or meteorites. The principal types of measurement are:

1. Mineralogy and petrology which includes the study of the mineral content of the rocks and compositions of these minerals. These studies will show how much water was present when the rocks crystallized or were formed on the lunar surface. The study will also show how surfaces were eroded by particles.

2. Measurements of physical properties of rocks and soil. These data will help in understanding optical observations of the moon from earth as well as future seismic experiments. Studies of microscopic fission tracts and cosmic ray induced tracks will help us understand the radiation history of the moon.

3. Studies of the chemical compostion of the rocks and fines. These studies will determine the concentration of virtually everyone of the 92 elements that occur on earth and in meteorites. Determinations of isotopic compositions of strontium lead, and the rare gas elements (Ne, Ar, Kr, and Xc) will determine the times of crystallization of the igneous rocks and the times that rocks have lain on the lunar surface. Studies of the rare gases in the soil will also furnish the first data on isotopic compositions of solar materials.

Biologists and organic chemists will determine the structures and relative abundances of compounds of carbon indigenous in, and deposited on, the lunar surface; determine the origin of the indigenous carbon compounds; catalog microstructures in terms of organized elements and microfossils; and define the presence or absence of viable lunar organisms.

A listing of the principal investigators, their institutions, the nature of their experiments, and their allocations of lunar material follows. These allocations are based on the recommendations of the Lunar Sample Analysis Planning Team. The exact allocations will often depend on the size of individual rock chips that are produced during chipping and cutting of the rocks. Special samples including transparent rock slices and polished rock slices are being prepared in the Lunar Receiving Lab during the next two weeks.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-63
September 19, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration has selected Dynalectron Corp., of Washington, D. C. for award of a contract to provide aircraft maintenance support services at the NASA Manned Spacecraft Center.

The period of performance under the contract will be for one year with provisions for two additional one-year renewals. The estimated amount of the first year of the cost-plus-award-fee contract is $3 million.

The contract will provide maintenance, modification, and ground support for T-38 and T-33 aircraft for astronaut flight readiness training, P-3A and C130B aircraft for earth resources programs, SH-3A and T-33 aircraft for special research programs, G-159 transport aircraft and Bell 47G-3B1 and Lunar Landing Training Vehicles for lunar landing training.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-64
September 19, 1969

HOUSTON, TEXAS--A NASA sounding rocket carrying three scientific experiments designed to provide measurements of the South Atlantic radiation belt was successfully launched from Natal, Brazil late Thursday night.

The probe which carried a 110 pound experiment package approximately 500 miles over the south Atlantic was launched at 10:15 p.m. CDT Thursday from the Barreira do Inferno range near Natal. A 37-foot tall Black Brant IV, a two-stage, sclid propellant sounding rocket, was the launch vehicle for the multi-unit science payload.

Primary objective of the mission was to provide detailed scientific measurements of the charged particle environment of the South Atlantic Anomaly (radiation belt) region.

The payload consisted of a Positive Ion Telescope (PIT), a Light Ion Detector (LIDE) and three magnetometers.

The PIT developed by Dr. D. Greiner of the University of California, Berkley, is an 8-element solid state device with a rectangular field of view.

The LIDE, similar to detectors flown June 1968 from Brazil, is intended to verify the existence of charged, low-energy ions at earth-orbital altitudes. The three-single-channel magnetometers measured the magnitude and direction of the magnetic fields at points along the payload trajectory.

The experiment package splashed down approximately 225 miles southeast of the launch site. Recovery of the package was not planned.

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Preliminary analysis of the data indicates that the experiments carried in the nose cone of the Canadian manufactured launch vehicle performed according to plan.

The Space Physics Division of MSC directed the program. The Sounding Rocket Branch of NASA's Goddard Space Flight Center, Greenbelt, Maryland, assisted in the launch and data recovery. For Brazil, the Brazilian National Space Commission (CNAE) provided overall management direction and scientific coordination and the Brazilian Ministry of Aeronautics carried out the data recovery and operations.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

September 22, 1969
MSC 69-65

HOUSTON, TEXAS--Some 500 representatives of industry, the Department of Defense and NASA will meet at the Manned Spacecraft Center September 25-26 to discuss future programs in manned space flight and to formulate plans for sustaining the team effort which produced the first manned lunar landing.

Keynote address at the affair, known as the National Seminar for Manned Flight Awareness, will be Dr. George Mueller, NASA's Administrator for Manned Space Flight. The seminar theme will be "After the Moon -- What?"

During the two-day meeting, astronauts and key members of NASA and industry management will speak and participate in panel discussions on future programs and their impact on the employees and management of individual companies concerned with the national manned space flight effort. NASA participants will include representatives from the John F. Kennedy Space Center, the Marshall Space Flight Center, NASA Headquarters and the Manned Spacecraft Center.

The seminar is part of NASA's Manned Flight Awareness program, which seeks to cultivate a sense of pride and purpose in those workers who comprise the manned space flight team.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

NASA

Houston 1, Texas

483-5111

September 25, 1969
MSC 69-66

HOUSTON, TEXAS--Col. James A. McDivitt, 40, today was appointed Manager of the Apollo Spacecraft Program at NASA's Manned Spacecraft Center.

He succeeds George M. Low, 43, who temporarily will be on special assignment to Dr. Robert R. Gilruth, Director of MSC, to plan future programs and work on organizational matters.

McDivitt, who commanded the Gemini IV and Apollo 9 missions, has been Manager for Lunar Landing Operations in the program office for the past 4 months. He has completed his primary responsibility in that capacity of planning future lunar landing missions, and the position has been eliminated.

"I am pleased to have a man with Jim McDivitt's experience as an astronaut, as an engineer, and as a manager to head the Apollo Spacecraft Program," Dr. Gilruth said.

Low has headed the Apollo Spacecraft Program since early in 1967. Prior to that he was Deputy Director of MSC.

Under Low's leadership, the Apollo spacecraft was made flightworthy after the fire of January 1967. He originated the plans for Apollo 8, the first manned lunar orbit flight, and he played a leading role in planning all of the Apollo missions.

During the time Low has directed the program, the Apollo spacecraft has performed five flawless manned flights, including the first manned lunar landing.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-67
October 3, 1969

HOUSTON, TEXAS--Astronaut L. Gordon Cooper, 42, has been named Assistant for Space Shuttle Program in the Flight Crew Operations Directorate at the Manned Spacecraft Center.

Cooper, an Air Force colonel, will be responsible for the flight crew training program, astronaut inputs into design and engineering, and the directorate's part in hardware development and testing in connection with the Space Shuttle.

He will report directly to Donald K. Slayton, Director of Flight Crew Operations.

Cooper will remain on flight status and will continue to be eligible for selection to spaceflight crews. His prior assignment was to the Apollo Applications section of the Astronaut Office.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
NASA
Houston 1, Texas

483-5111

MSC 69-68
October 11, 1969

HOUSTON, TEXAS--"Yankee Clipper" and "Intrepid" will be the call signs for the Apollo 12 command and lunar modules, respectively.

The names, which will be used to distinguish the craft when they are separated, were selected by the Apollo 12 crew from entries submitted by employees of North American Rockwell Space Division, principal contractor for the command and service modules, and Grumman Aerospace Corporation, principal contractor for the lunar module.

"Yankee Clipper" was submitted by George T. Glacken, 52, a senior flight test engineer at North American Rockwell. Glacken said he submitted the name because, "Yankee clippers of old majestically sailed the high seas with pride and prestige for a new America, and so shall this Yankee Clipper in space."

Glacken, his wife and five children live in Fullerton, California. He has been employed by the company for 18 years. As a Navy pilot in World War II, he was awarded the Navy Cross. Glacken prepares detailed checkout specifications for testing Apollo spacecraft systems prior to delivery to NASA.

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MSC 69-68
Add 1

"Intrepid" was submitted by Robert A. Lambert, 36, who works in Grumman's Operations Planning and Scheduling Department, Space Programs.

Lambert said the name "denotes this nation's resolute determination for continued exploration of space, stressing our astronauts' fortitude and endurance of hardship in man's continuing experiences for enlarging his universe."

Lambert, his wife and three children live in Commack, New York. He has been in the aerospace industry since 1935 and has held various positions in aerospace sales, market research and program management.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-69
October 13, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration has modified its contract with the IBM Corp., Gaithersburg, Md., for the Real Time Computer Complex (RTCC), which supports Apollo Lunar Landing Missions. The modification is valued at about $4.1 million, which brings the extended cost and fee to $190,972,856.

The modification definitizes the requirements to support the Apollo Lunar Surface Experiments Package (ALSEP). Work under the contract will continue to be performed under a multi-incentive arrangement covering cost, performance, schedule and equipment management.

The contract, with IBM Federal Systems Division, includes design, development, implementation, maintenance and operation of the RTCC through June 30, 1971.

The RTCC in the Mission Control Center at NASA, Manned Spacecraft Center, Houston, provides the computer capabilities required for mission monitoring, in-flight mission planning and simulation activities.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

October 16, 1969

RELEASED BY NASA HEADQUARTERS

HOUSTON, TEXAS--Two cosmonauts from the USSR will begin a two-week visit to the United States Monday as guests of American astronauts.

Announcement of the visit was made today by Astronaut Frank Borman, who extended an invitation to the USSR's spacemen to visit this country. Borman issued the invitation when he was in the USSR in July.

The two cosmonauts are Major General Georgiy Beregovoy and Konstantin Feoktistov. General Beregovoy flew in the Soyuz 3 spacecraft in October of last year. Feoktistov was the scientist member of the three-man Voskhod space flight in October 1964.

They will arrive in New York Monday afternoon. Beregovoy will be accompanied by his wife and son. Feoktistov is traveling without his family.

Details of the cosmonaut's itinerary are being arranged. They are expected to visit both East and West Coasts, the Manned Spacecraft Center in Houston and Cape Kennedy, Florida.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-70
October 22, 1969

A 34-million-cubic-foot volume balloon will be launched by the Air Force Cambridge Research Laboratories in support of NASA's CRISP (Cosmic Ray Ionization Spectrograph Program) from Holloman AFB, New Mexico, on or about November 3, 1969.

It is the largest balloon ever built --- 442 feet taller than the Washington Monument --- and will carry a payload of 13,800 pounds to an altitude of about 108,000 feet. The CRISP balloon will provide a stable high altitude platform that will enable scientists of NASA's Manned Spacecraft Center, Houston, Texas, to measure the intensity of cosmic radiation in the upper atmcsphere. This experiment will be the first in a series designed tc provide significant new scientific information about the high energy cosmic radiation and to develop future scientific experiments to be conducted in later space station missions.

CRISP is a project of the Science and Applications Directorate of the NASA Manned Spacecraft Center, Houston, Texas. Air Force Cambridge Research Laboratories, headquartered at L. G. Hanscom Field, Bedford, Massachusetts, is providing the balloon system and is responsible for the launching, operational control, and recovery of the balloon system and its scientific payload. AFCRL is an element of the Office of Aerospace Research, U. S. Air Force. The Landing and Recovery Division of MSC is

-more-

supporting the project in the areas of flight operations, data acquisition and recovery of the payload.

Dr. Richard Kurz of the Science and Applications Directorate at MSC heads up the CRISP scientific team for NASA and Arthur O. Korn is AFCRL's Field Test Director for CRISP.

The CRISP balloon and payload --- which will stand 997 feet tall --- will be launched from Holloman Air Force Base, New Mexico, and prevailing winds are scheduled to carry the drifting balloon and gondola on an easterly course across several southern states at a 20-mile high altitude.

It is scheduled for lift-off at approximately 7 a.m. CST. It will require 2½ hours for the payload to reach design altitude of 108,000 feet where prevailing winds will move the package eastwards for approximately 24 hours. Recovery is scheduled for 12 noon CST the following day.

The exact recovery location depends on the speed of the prevailing winds. Ten to 20 mph winds are expected to carry CRISP over north-central Texas; 30 to 40 mph winds will place it over Mississippi or Alabama, and 50 mph winds could push the balloon and gondola as far east as Georgia. It should be visible from the ground as it passes on its eastward course at about 32 degrees north latitude.

The mammoth balloon is a two-part interconnected system with its balloon surmounted by a smaller launch balloon. Both balloons are made of laminated Mylar plastic film with reinforcing Dacron fibers. At

launch the smaller balloon will be filled with 500,000 cubic feet of helium.

The CRISP balloon system's 997 foot overall length at launch will change to a nearly-spherical, 34-million-cubic-foot volume as the system ascends to higher altitudes. The expanding helium flows through a connecting transfer duct --- a collar-like ring which joins both balloons --- to fill the main balloon to a diameter of 431 feet. Fourteen and a half acres of plastic film go into the making of the CRISP balloon and 37 miles of seals have been made to join its many balloon panels.

The tandem balloon will lift its 13,800-pound payload to an altitude of about 108,000 feet where it is programmed to stay for about 24 hours. This record payload consists of the NASA experiment-carrying gondola (9,000 lbs.); AFCRL balloon control instrumentation, recovery parachutes and lift train (800 lbs.); and ballast carried for balloon altitude control (4,000 lbs.).

The gondola is an odd-shaped structure of 13.3 x 8.3 x 5 feet. The scientific instrumentation is comprised of spark chambers, radiation detectors, and an ionization spectrograph which will identify the various components of the cosmic radiation incidents upon the package and measure their energy.

NASA scientists will follow the CRISP balloon from a U. S. Air Force C-130 aircraft. The aircraft is equipped with data acquisition van and equipment for monitoring and control.

CRISP's descent phase will begin upon completion of 24 hours of data gathering. Helium will be vented from the main balloon and it will

then take 2½ hours for CRISP to descend to 10,000 feet. The recovery area chosen, the CRISP payload will be separated from the balloon by radio command and will be carried to land by three 100 foot diameter recovery parachutes. Recovery crews will be in place to collect the gondola and gather the remains of the non-reuseable balloon.

The gondola and its scientific instruments will be returned to the Manned Spacecraft Center for analysis. The gondola and instruments are planned for use on future experiments in CRISP.

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CRISP

General Information

1) Scientific Objective
2) Flight Objective
3) Flight Plan
4) CRISP Dimensions
5) Balloon Description
6) Gondola Description
7) Parachutes
8) Data Acquisition Van
9) Organization and Personnel

Illustrations

1) CRISP Launch Configuration
2) CRISP Float Configuration
3) Landing Point Dispersion
4) Flight Profile
5) Recovery Communications

GENERAL INFORMATION

1. CRISP Scientific Objective

Measure the energy distribution of the several components of the primary cosmic radiation in the energy group of 10^{10} to 10^{14} eV. These components include atomic nuclei (from radiation to at least iron), electrons and possibly photons and neutron.

2. CRISP Flight Objective

Test the scientific instrumentation package and data acquisition systems and collect scientific data which can be analysed to partially achieve the scientific objective. The minimum float duration considered useful for the scientific equipment is 12 hours and design duration is 24 hours at prescribed altitude of 108,000 feet.

3. Flight Plan

Following a 7 CST launch from Holloman AFB, New Mexico, it will take about 2 1/2 hours for the CRISP balloon to reach float altitude. Ascent rate is 800 feet per minute. Launch will be contingent upon suitable weather conditions at the launch site, along the flight trajectory, and in the predicted recovery area.

After 24 hours at float altitude and eastward drift, its descent phase will be initiated. This will begin with valving off helium. Descent is scheduled to begin at 9:30 a.m. CST the following day launch. A 2 1/2 hour descent time is planned and at 10,000 feet the 9,800 pound payload (ballast will have been expended) will be separated from the CRISP

balloon by radio command (from Holloman AFB) and the three 100-foot diameter parachutes will lower the gondola to the ground.

Recovery crews will be in place to recover the gondola and the remains of the balloon. Landing time is estimated to be 12 noon CST.

4. CRISP - dimensions

Balloon/Gondola	Launch	Float
Overall length	997 feet	720 feet
Launch balloon length	130	130
Main balloon length	631	354
Gondola & lifttrain	36	36
Parachute system length	200	200
Main balloon diameter	---	431
Main balloon volume	---	34 million cubic feet
Launch balloon volume	1/2 million cu ft	---
Payload weight - total	13,800 lbs	
Gondola	9,500	
Parachutes	300	
Ballast	4,000	

5. Balloon - description

The balloons are constructed of Mylar plastic film laminated with Dacron threads for reinforcement. The performance of the balloon

will be controlled and monitored by high frequency (HF) radio links. The HF command link will be actuated from the control center at Holloman, or the backup ground stations, or the aircraft and will be capable of increasing or decreasing the balloon altitude and affect balloon cut-down.

Four ballast hoppers, each capable of carrying 1,000 pounds of lead, will be attached to the gondola.

The balloon is equipped with flashing strobe lights which will be activated anytime the balloon is below 60,000 feet. A passive radar reflector is also attached to permit the Federal Aviation Agency (FAA) skin tracking to locate the balloon. The gondola instrumentation includes a radar transponder to permit the FAA to accurately locate the balloon system.

Material - 14.5 acres of Mylar/Dacron material and 37 miles of seals for the balloon gores(panels). Combined weight of the launch and main balloon is 7,800 pounds.

The CRISP balloon was manufactured by the G. T. Schjeldahl Company of Northfield, Minnesota.

6. Gondola - Description

The gondola is 163 inches tall, 101 inches wide, and 60 inches deep. The instrumentation is composed of detectors, electronic

other government agencies. Not only does AFCRL launch balloons, but it designs them as well, with the primary goal being to increase the altitude/payload capabilities of plastic balloons.

Giant balloon technology dates from 1965 when a 13.5 million cubic foot polyethylene balloon, then of record size (the average polyethylene ballon is about 5 million cubic feet in volume), carried a 450 pound payload to an altitude of 142,000 feet. In April 1966, a weight record was made when a scrim (plastic material with fiber reinforcement) balloon raised a 10,300 pound payload to 70,000 feet. These flights were precursors to the mammoth balloon designed by AFCRL for Project CRISP.

Other government agencies scheduled to participate in CRISP are Department of Defense, Federal Aviation Agency, and Federal Communications Commission.

DOD will actively support the flight with Air Force and Army aircraft, equipment, and personnel.

The FAA is scheduled to provide tracking of the balloon and aircraft during all phases of the mission and the FCC will also track the CRISP balloon from launch through termination.

Key Personnel

Dr. Richard J. Kurz, MSC, Principal Investigator

digital command system are included in the payload to monitor and control the performance and state of all gondola systems.

(3) Power system - the prime power system is composed of four parallel packs of silver-zinc batteries. Each pack, individually sealed in watertight containers, consists of 18 cells in series.

(4) Gas system - the interior pressure of the gondola will be maintained at about 14.7 psia. The gondola gas system is intended to make up any nominal leakage of gas from the gondola during flight.

7. Parachutes

The descent system consists of a three parachute configuration with each chute having a diameter of approximately 100 feet. The riser lines will be connected to a central confluence point containing a tension load link for measuring loads on deployment.

The three chutes are included in the lifttrain in an unfolded configuration. Each parachute weighs 100 pounds.

8. Data Acquisition Van (DAV)

The Data Acquisition Van which will be flown aboard the C-130E aircraft contains telemetry receiving equipment, real time electronic monitoring and data display equipment, and command equipment for both the balloon (HF) and gondola (UHF) command systems.

power, and gas systems:

(1) Detectors - the detectors consist basically of two separate packages - the charge identification module and the ionization spectrograph.

The charge identification module determines the charge of the incident cosmic ray particle, the direction and the fact of incidence and that only one particle has impinged upon the instrument. This package is composed of two spark chambers, a plastic Cerenkov detector and two plastic scintillation detectors.

The ionization spectrograph measures the total energy of an incident particle by measuring the energy deposited in the spectograph in the form of ionization. The spectograph is composed of tungsten and steel modules. The tungsten module is used to distinguished between electrons and protons by the considerable difference in the development in tungsten of the electron-photon cascade produced by an electron and the nuclear cascade produced by a proton.

(2) Electronic systems - The detector electronic system consists of high-speed logic electronics and the digital system. The logic electronics classifies the incident cosmic rays into categories and initiates the data acquisition sequence. The digital data system converts the data to a format suitable for the data acquisition system. The data acquisition system consists of a VHF telemetry system and an onboard magnetic tape recorder. In addition, an analog data system and a UHF

9. Organization

NASA Manned Spacecraft Center - The Cosmic Ray Physics Branch, Space Physics Division of the Science and Applications Directorate at NASA's Manned Spacecraft Center, Houston, is responsible for the overall program. These responsibilities include the design, fabrication and operation of the experiment equipment and the evaluation of the experiment data.

The Landing and Recovery Division, Flight Operations Directorate, MSC, provides major support in flight and recovery operations planning and coordination. In addition, LRD is responsible for providing and operating the airborne data acquisition facilities.

Houston Aerospace Division, Lockheed Electronics Company, provides engineering support to MSC on CRISP.

Air Force Cambridge Research Laboratory (AFCRL) - The AFCRL is responsible for all aspects of the balloon system and overall flight and recovery operations.

Personnel of AFCRL's balloon R & D Test Branch at Holloman AFB will provide meteorological support, launch the balloon, perform flight control of the system, track the balloon, and recover the payload and the remains of the balloon when the flight is terminated.

The largest developer and user of balloons in this country, AFCRL launches about 120 balloons each year. Many of these carry scientific payloads for AFCRL. Most, however, are flown in support of research or development problems at universities, numerous DOD agencies, and

Key Personnel (cont'd)

Dr. Richard D. Eandi, MSC, Co-investigator

Dr. Donald E. Hagge, MSC, Chief, Cosmic Ray Physics Branch

Wade L. Craddock, MSC, Program Manager

Art Korn, AFCRL, Field Test Director

Jerry Hoisington, MSC, Operations Coordinator, Landing and Recovery Division

Larry Bell, MSC, Test Conductor, Landing and Recovery Division

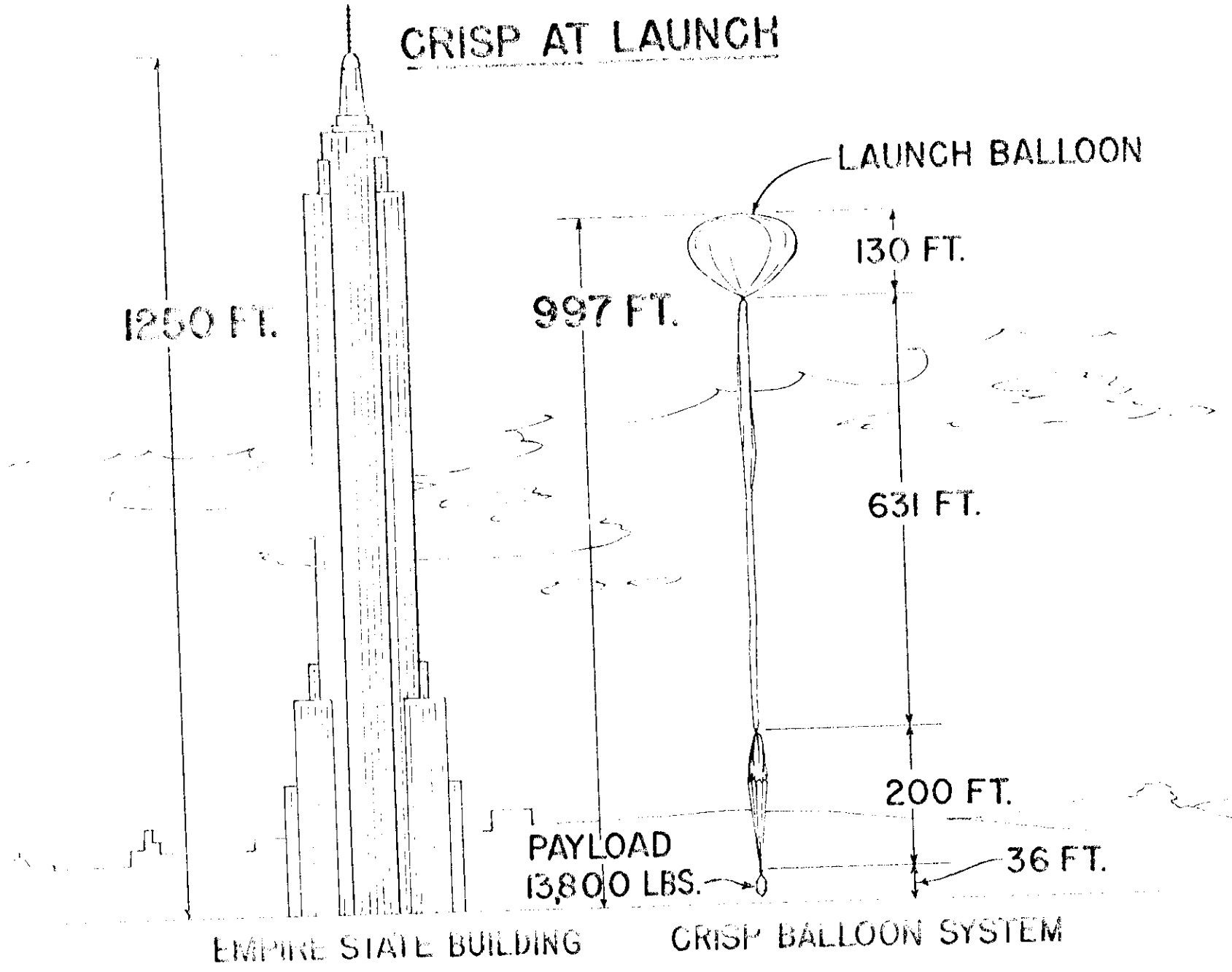
CRISP AT LAUNCH
LAUNCH BALLOON
130 FT.
1250 FT.
997 FT.
631 FT.
200 FT.
PAYLOAD
13,800 LBS.
36 FT.
EMPIRE STATE BUILDING
CRISP BALLOON SYSTEM

Figure 1-

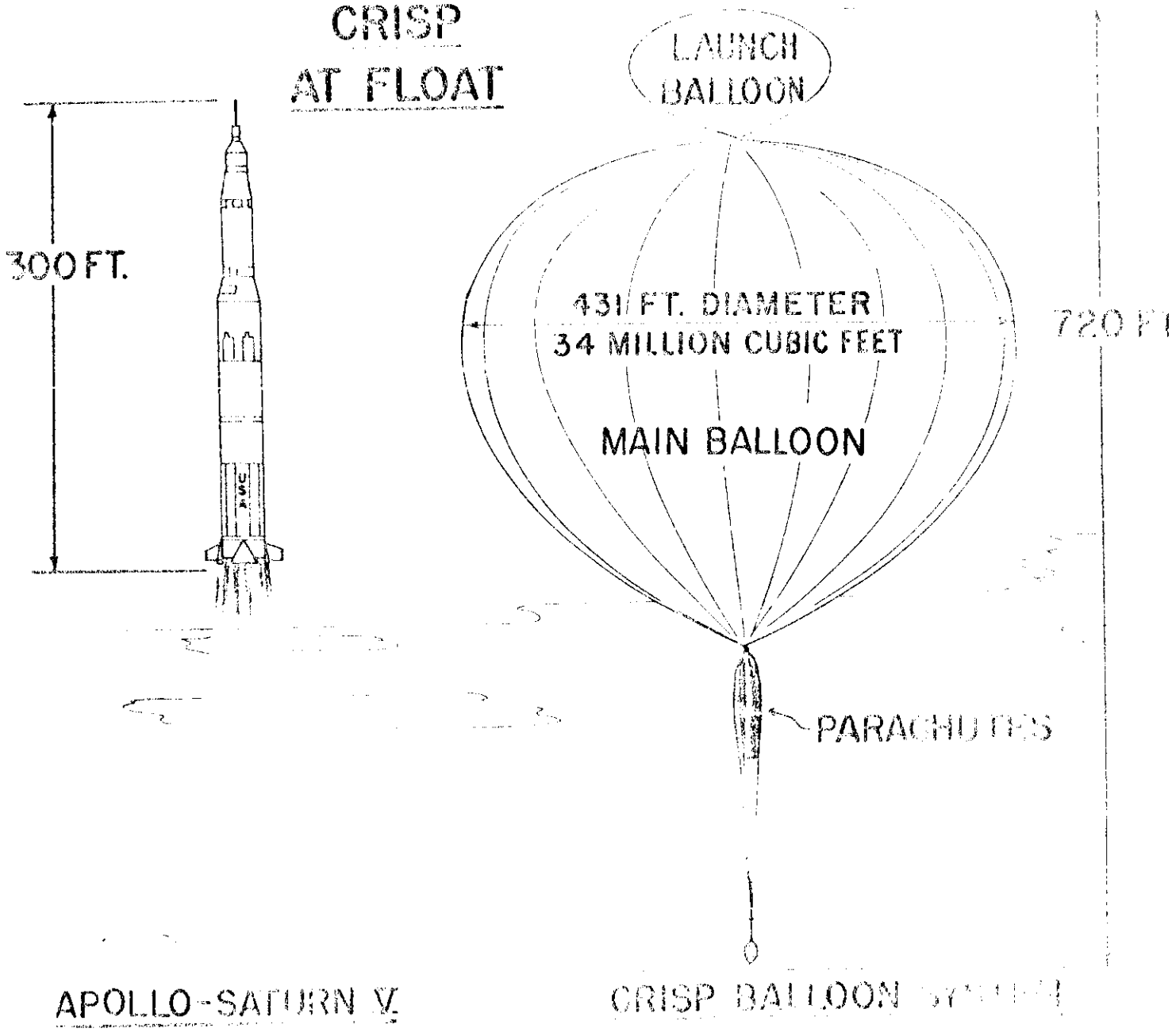
CRISP
AT FLOAT
LAUNCH
BALLOON
300 FT.
431 FT. DIAMETER
34 MILLION CUBIC FEET
MAIN BALLOON
720 FT
PARACHUTES
APOLLO-SATURN V
CRISP BALLOON

Figure 2-

NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

MSC 69-71
October 17, 1969

HOUSTON, TEXAS--Lt. Gen. Frank A. Bogart (USAF Ret.) has been appointed Associate Director of the National Aeronautics and Space Administration Manned Spacecraft Center, Houston, succeeding Wesley L. Hjornevik who has been nominated by President Nixon to be Deputy Director of the Office of Economic Opportunity.

Succeeding Bogart as Deputy Associate Administrator for Manned Space Flight (Management) at NASA Headquarters is Harry H. Gorman, Deputy Director (Management) of the NASA Marshall Space Flight Center, Huntsville, Ala.

General Bogart joined NASA in December 1964 as a special assistant to the Associate Administrator for Manned Space Flight. He was named Deputy Associate Administrator (Management) in September 1965.

General Bogart is a 1931 graduate of the United States Military Academy. His military service includes assignments in the United States Army and United States Air Force. He was Comptroller of the Air Force when he retired in 1964.

Gorman joined the Marshall Space Flight Center staff in June 1960 following an assignment with the Atomic Energy Commission as manager of its Lockland Operations Office in Ohio.

Gorman is a graduate of St. Louis University. He served in several administrative positions in the Army and was director of the budget in the Atomic Energy Commission's San Francisco Operations Office. He also served as Deputy Assistant Director of the Division of Reactor Development for AEC in Washington.

Hjornevik joined NASA as Assistant to the Administrator to deal with special organizational and planning problems and to act as liason with other government agencies. As chairman of the NASA Budget

-more-

Analysis Team he worked on relocation of the Space Task Group from Langley AFB, Virginia to Houston and establishment of the Manned Spacecraft Center.

Hjornevik was appointed Director of Administration for the Manned Spacecraft Center in November 1961, and in January 1968 he was named Associate Director of the Manned Spacecraft Center, responsible for the total integrated administrative management of the Center and its programs.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

69-72

October 21, 1969

Dr. Gene Simmons, Professor of Geophysics at the Massachusetts Institute of Technology, has been appointed to the new position of Chief Scientist at NASA's Manned Spacecraft Center.

Dr. Robert R. Gilruth, Director of MSC, who announced the appointment on Tuesday, also named Mr. Anthony J. Calio to the position of Director of Science and Applications at MSC.

The Chief Scientist will place additional emphasis on the strong role that science will play in lunar exploration flights and other manned flights of the future. He reports directly to Dr. Gilruth and will work closely with Center management as well as with scientists throughout the world. The Chief Scientist's post was created with a view toward attracting eminently qualified scientists from academic life to NASA's manned space flight program in order to effect the closest possible ties between these programs and the scientific community.

Dr. Gilruth said: "I am pleased to name Dr. Simmons as MSC's first Chief Scientist. Dr. Simmons' background in geophysics will add tremendously toward the achievement of NASA's major goal of the scientific exploration of the moon."

Dr. Simmons has been closely associated with the lunar science program and was actively engaged in the preliminary analysis of lunar samples returned by the Apollo 11 crew. As Chief Scientist, he will

-more-

serve as the Center's spokesman to the scientific community and will be responsible for planning and developing MSC's scientific program in conjunction with scientists throughout the world.

Dr. Simmons will continue his ties with MIT. Because of academic commitments, Dr. Simmons will spend only a portion of his time at MSC.

Dr. Simmons has written over 60 papers in the field of geophysics, including the laboratory measurements of physical properties (heat flow and gravity measurements) and field interpretations and geophysical data. He spends some of his time working in marine geophysics.

Dr. Simmons is considered an expert in the area of heat flow and laboratory measurements of physical properties of geological material. His work has provided a foundation for the understanding of elastic properties of rocks.

Dr. Simmons, a native of Carrollton, Texas, has been Professor of Geophysics at MIT for the past 4 years. He is a co-investigator of the lunar surface heat flow experiment scheduled for a future Apollo mission. Prior to joining MIT, Dr. Simmons was Assistant Professor of Geology at Southern Methodist University in Dallas (1962-65) and was a National Science Foundation Fellow at Harvard University (1961-62). He received his doctorate from Harvard in 1962. He is a graduate of Texas A&M (1949) and received his masters at SMU in 1958.

Mr. Calio, who has served as Deputy Director for Projects in the Science Directorate since February 1968, will be responsible for the

general management of the Directorate and for the implementation of MSC's science program. Mr. Calio has been Acting Director of Science and Applications since September 1969. He joined NASA in 1963, and served as Assistant Director for Planetary Explorations with the Office of Space Science and Applications, NASA Headquarters, before coming to MSC in 1968.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

October 23, 1969

672-6

RELEASED BY THE AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

George M. Low will be honored today for leading the nation's Apollo Spacecraft Team to a successful lunar landing.

The American Institute of Aeronautics and Astronautics has elected the 43-year-old engineer to receive its prestigious Louis W. Hill Space Transportation Award. The award includes an honorarium of $5,000.

Low will receive the award at the AIAA's Honors Banquet this evening in the Anaheim Convention Center. The banquet concludes the 4-day 6th annual meeting and technical display of the institute.

Low has been manager of Apollo Spacecraft Programs at NASA's Manned Spacecraft Center in Houston, Texas, and is now on special assignment to the Center director.

In naming Low to receive the award, the Hill Award Committee said it made the selection not only because of his leadership role, but because he symbolizes "the thousands of engineers who dedicated their careers, without public recognition, to the conquest of space."

Low, a native of Vienna, Austria, studied at Rensselaer Polytechnic Institute, Troy, New York, receiving a Master's Degree in Aeronautical Engineering in 1950. He went to work for NASA in 1949 at Lewis Research Center, Cleveland, and specialized in research in the fields of aerodynamic heating, boundary layer theory and transition and internal flow of supersonic and hypersonic aircraft.

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Add 1
AIAA Release

In 1958 he was named Assistant Director for Manned Space Flight Programs in NASA and became, in 1961, chairman of the select committee which performed the original studies leading to the manned lunar landing program.

He became Deputy Director of NASA's Manned Spacecraft Center in February 1964, assuming responsibility for managing Gemini and Apollo spacecraft programs, Apollo Applications development programs, control of all manned spaceflight missions, selection and training of astronauts and development of technology for present and future manned spacecraft.

Among previous winners of the Hill award were William Pickering, Director of the Jet Propulsion Laboratory; Abe Silverstein, Director of Lewis Research Center; the late W. Randolph Lovelace, II, pioneer in space medicine; rocket pioneer Werhner Von Braun; the late Hugh L. Dryden, early leader of America's space programs; Robert R. Gilruth, now head of the Manned Spacecraft Center; S. K. Hoffman, President of North American Rockwell's Rocketdyne Division; James A. Van Allen, space physicist, and Robert H. Goddard, the Father of American Rocketry.

The Hill award has been given annually since 1958 under terms of a trust established by the Louis W. and Maud Hill Family Foundation to encourage and recognize significant contributions in the art and science of space flight.

The text of this year's citation: "For his leadership role in bringing the Apollo Program to fulfillment, and to the thousands of engineers who dedicated their careers, without public recognition, to the conquest of space."

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

69-73
October 27, 1969

A fragment of moon rock returned to Earth by the crew of Apollo 11 will go on public display at the Manned Spacecraft Center Wednesday.

MSC Director Robert R. Gilruth will unveil the display at 2:00 p.m. in the front lobby of the Center's auditorium. The exhibit will be the second such official display of returned lunar surface material in the nation; the first public display of moon rock was opened at the Smithsonian Institution in Washington, D.C., last month.

A 4-foot diameter opaque sphere with a 20-inch viewing port is the central part of the display, and 12 associated photograph and text panels complete the exhibit. The lunar rock fragment is mounted in a 4-inch hemisphere on a pedestal inside the larger sphere and is visible through the viewing port.

The first lunar rock sample to go on display weighs 31 grams, or slightly over 1 ounce, and measures $1\frac{1}{4}$ inches long, 1 inch wide, and 3/4 inch thick. The fine-grained crystalline fragment contains a large number of vesicles lined with highly reflective crystals.

The rock fragment will be changed periodically as geologists in the MSC Lunar Receiving Laboratory conduct experiments on the Apollo 11 rock samples. Public viewing hours will be from 10:00 a.m. to 4:00 p.m. each week day and from 1:00 p.m. to 5:00 p.m. during the Sunday open house.

The plastic hemisphere containing the lunar rock each night will be removed by a security guard and taken to the Lunar Receiving Laboratory

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vault for overnight storage. The exhibit will be moved to the auditorium rear exhibit hall as the front lobby is converted into a work area for newsmen covering Apollo missions.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

69-74
October 27, 1969

Dr. Persa R. Bell, Chief of the Lunar and Earth Sciences Division and Manager of the Lunar Receiving Laboratory at NASA's Manned Spacecraft Center since 1967, Monday announced he will leave NASA early in 1970.

Dr. Bell said he will return to the Oak Ridge National Laboratories, Oak Ridge, Tennessee, after the lunar sample analysis conference which is scheduled to be held at MSC January 5, 1970.

In announcing his resignation, Dr. Bell said, "I've enjoyed being a part of the first lunar landing mission and felt tremendous pride in being a part of the preliminary analysis of the first samples returned from the Moon." He said he fulfilled his plans --- that of getting the lunar lab ready for the first lunar sample --- and now desires to return to scientific research at Oak Ridge.

Dr. Bell managed the Laboratory from the time construction was completed in June 1967 through the return and the preliminary analysis of the first lunar sample.

Mr. Anthony J. Calio, Director of Science and Applications at MSC said that Dr. Bell will assume the duties as his special assistant until his departure. In this new role, Dr. Bell will lend his expertise to the evaluation of more than 200 scientific proposals on future experiments in lunar science, evaluate and recommend, where necessary, improvements in LRL operations, and perform scientific research within the LRL.

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69-74
Add 1

Mr. Bryan Erb, Deputy Chief of the Lunar and Earth Sciences Division will be acting manager of the Lunar Receiving Laboratory for the Apollo 12 mission. Mr. Calio will be acting as Chief of the Lunar and Earth Sciences Division until an appropriate scientist can be obtained for this post.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

November 5, 1969

RELEASED BY NASA HEADQUARTERS

The Interagency Committee on Back Contamination (ICBC) met October 30 to review the physical, chemical, and biological results of the Lunar Receiving Laboratory (LRL) preliminary test program on the Apollo 11 lunar samples. As a result of this ICBC Review, two recommendations were made which the National Aeronautics and Space Administration has approved and will follow for Apollo 12.

1. If the Apollo 12 crew condition is normal at earth landing, fresh flight suits and oral-nasal masks will be used instead of the integral Biological Isolation Garments (BIG's) as on Apollo 11. BIG's will be available for use as a contingency in case of unexplained crew illness.

The masks have a valve for inhalation of fresh air and a bacterial filter for exhalation. Following landing, the Apollo 12 crew will put on the flight suits and face masks which will be passed to them through the spacecraft hatch by a recovery swimmer wearing standard scuba gear. The swimmer will swab the hatch and adjacent areas with a liquid decontamination agent. The crew will then be carried by helicopter to the recovery ship where they will enter a Mobile Quarantine Facility and all subsequent crew quarantine procedures will be the same as for Apollo 11.

2. The spacecraft will be returned to Hawaii by the recovery ship where a team will deactivate pyrotechnics, and flush and drain fluid systems (except water).

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This operation will be confined to the exterior of the spacecraft. The spacecraft will then be flown to the Lunar Receiving Laboratory at the Manned Spacecraft Center, Houston, and placed in a special room for storage. Lunar sample release from the LRL is contingent upon quarantine test results and, since the spacecraft will be released at the same time, there is no requirement for spacecraft sterilization. This procedure does contain the spacecraft in LRL storage an additional 4 weeks from December 12, 1969 to January 7, 1970. Contingency plans call for sterilization and early release of the spacecraft if the situation so requires.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-75
November 5, 1969

HOUSTON, TEXAS--The National Aeronautics and Space Administration today made the final decision to install a color television camera aboard the Apollo 12 lunar module.

Apollo Spacecraft Program Manager James McDivitt made the decision to fly the color TV camera after viewing a 3-hour test from NASA Kennedy Space Center Launch Complex 39, where the Apollo 12 space vehicle awaits a November 14 launch.

The test utilized the lunar module's Unified S-Band transmitter and engineers simulated varying return signal strengths to Manned Space Flight Network tracking antennas. The camera was focused first on a color pattern, then on a pad technician for registering flesh tones, and finally a view from the top of the service tower of the area between Pad 39 and the beach.

Results of the test indicate that the color TV pictures from the lunar surface transmitted through the lunar module will not be of the same color quality as seen from the command module color TV on Apollo 10 and 11 missions. The lunar module color TV camera does provide better definition and less blurring of astronaut movement than the pictures made with the black and white TV camera as used on the lunar surface by the Apollo 11 crew.

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MSC 69-75
Add 1

The camera to be flown on the lunar module will be placed on the lunar surface by Apollo 12 Commander Charles Conrad and Lunar Module Pilot Alan Bean to relay back to earth a view of their two $3\frac{1}{2}$ hour periods of extravehicular activity. The camera was flown in the Apollo 10 command module and was refurbished for Apollo 12 lunar surface operation.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

69-76

November 6, 1969

WHITE SANDS TEST FACILITY, NEW MEXICO---Ten National Aeronautics and Space Administration employees and four support contractor firms today received special NASA awards at a White Sands Test Facility ceremony. The awards were in recognition of the individual and company participation in extensive Apollo propulsion system test programs conducted at the facility.

Kenneth B. Gilbreath and Rob Tillett were presented the NASA Certificate of Commendation. Gilbreath will become White Sands Test Facility Manager, effective November 10, 1969, replacing M. L. Raines. Raines, who presented the awards, has been assigned Manager of Reliability, Quality, and Safety at the NASA Manned Spacecraft Center at Houston.

NASA Superior Achievement Awards were presented to Archie R. Beckett, L. Maurice Clelland, Kenneth R. Haynes, Benjamin C. Ingels, Jr., John F. Day, Michael J. Hamilton, Edwin J. Burke, and Edwin W. Sievers, Jr.

Support contractor firms and Government agencies receiving the NASA Certificate of Appreciation were LTV Space Technology Corporation, the Zia Company, U. S. Army White Sands Missile Range, and Headquarters, U. S. A. F. Missile Development Center, Holloman AFB, New Mexico.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-77
November 6, 1969

HOUSTON, TEXAS--A failure in the balloon system of Cosmic Ray Ionization Spectograph experiment (CRISP) resulted in an abort of a NASA project to study high altitude cosmic rays Thursday over New Mexico.

The 13,800 pound experiment package landed 34 miles northeast of Roswell, New Mexico at about 11:30 CST after being launched from Holloman AFB three hours earlier. The scientific package was designed to carry the payload to 108,000 feet altitude where it would float for approximately 24 hours gathering data on high energy cosmic radiation.

Dr. Richard Kurz, chief scientist for CRISP, said a leak apparently developed in the lower portion of the giant float balloon. A problem became evident when the system reached 60,000 feet altitude.

Project officials directed descent of the system. The 4,000 pounds of ballast was dumped and the system descended to 10,000 feet where the three 100-foot parachutes lowered the payload to the ground.

The balloon landed 58 miles east of Roswell.

The balloon and payload will be returned to Holloman AFB where a review board will determine the cause of the failure.

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NEWS RELEASE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
Houston 1, Texas

483-5111

MSC 69-78
November 10, 1969

RELEASED BY NASA HEADQUARTERS

HOUSTON, TEXAS--Dr. George E. Mueller, who directed the United States manned space flight program for six years--from the beginning of Gemini flight operations through the first manned lunar landing--will leave the National Aeronautics and Space Administration December 10.

Dr. Mueller, NASA's Associate Administrator for Manned Space Flight, was responsible for the largest research, development and operational program ever undertaken by man. At its peak, the Apollo Program involved over 400,000 NASA, other government, university and industry personnel.

No successor to Dr. Mueller has been named and Dr. Mueller has not announced his plans for the future.

"It is due to Dr. Mueller's creative leadership of the magnificent manned space flight organization that the flight of Apollo 11 in July 1969, achieved the national goal set in May 1961: the landing of men on the Moon and their safe return to Earth by the end of the decade," said Dr. Thomas O. Paine, NASA Administrator.

"We regret that Dr. Mueller has made the decision to return to private life, but recognize that decision comes at a time when the task he accepted is complete and a sound foundation for our future national space program has been established."

Some of Dr. Mueller's important contributions to the manned space flight program include:

- Achieving an early operational flight schedule in Gemini with launches about every six weeks.

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- Formulating a concept for thorough and comprehensive ground testing, which made possible "all-up" flight testing of vehicles (all stages actively flying) rather than flight testing stage by stage. All-up testing in turn made possible early operational availability of Saturn-Apollo hardware.
- Introduction of new and improved techniques that established efficient management of the nation-wide industrial complex that led to the accomplishment of man's first lunar landing and return on schedule and within cost.
- Formulation of low cost space transportation and operations, which are the basis for the space shuttle and space station programs to be undertaken by the United States in the next decade.

"It has been a great privilege to serve the United States in the most important technological and scientific program of the last century," said Dr. Mueller. "Heading the Nation's manned space flight program was a rare opportunity. Never have so many people worked together so successfully to achieve through excellence an almost unbelievable challenge," he added.

Dr. Mueller, who holds many honors, including the NASA Distinguished Service Medal, was born in St. Louis July 16, 1918. He received his B.S. in Electrical Engineering from the Missouri School of Mines in 1939, his M.S. in Electrical Engineering from Purdue University in 1940, and his Ph.D. in Physics from Ohio State University in 1951.

Following graduation from Purdue University in 1940, Dr. Mueller joined the Bell Telephone Laboratories, doing research work until joining the faculty of Ohio State University in 1946. In 1952, he was appointed Professor of Electrical Engineering at Ohio State and held that post until joining Space Technology Laboratories, Inc., Redondo Beach, Calif. in 1958.

MSC 69-78
Add 2

As a senior official of Space Technology Laboratories for over five years, Dr. Mueller made a dynamic contribution to the early growth of the United States space program. He was responsible for critical design, development and test work on the Nation's major missile programs--Atlas, Titan, Minuteman and Thor missiles, the Pioneer I, Explorer VI and Pioneer V satellites and the U.S. SPAN Satellite tracking network.

Dr. Mueller and his wife reside in Washington, D. C. They have two daughters; Karen Hyvonen, who resides in Nashville, Tennessee, and Jean of the home address.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

November 20, 1969

RELEASED BY NASA HEADQUARTERS

The National Aeronautics and Space Administration has signed a supplemental agreement with the Grumman Aerospace Corporation valued at $12,158,720 for changes in the Apollo Lunar Module contract.

The agreement formally incorporates into the Grumman contract 90 changes, previously authorized by NASA, for modifications to the thermal testing procedures of the LM components and to flight and ground test hardware and for crew safety hardware changes.

The modifications bring the total estimated value of the Grumman contract since January 1963 to approximately $1,666,105,760.

Grumman performs the work on the Lunar Module at its Bethpage, N. Y., facility with support from its field offices in Houston, Tex., and White Sands, N.M., and at the Kennedy Space Center, Fla.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-79
November 26, 1969

HOUSTON, TEXAS-- Dr. Christopher C. Kraft, Jr. today was named Deputy Director of the Manned Spacecraft Center.

Kraft succeeds George S. Trimble, who resigned September 30, 1969. A successor to Kraft as Director of Flight Operations has not yet been selected.

Dr. Robert R. Gilruth, Director of MSC, in announcing Kraft's appointment, said, "I am delighted to have a man of Dr. Kraft's broad experience in manned space flight, one who has done so much to make flight developments possible, assigned to this important position in our program."

Kraft was one of the original members of the Space Task Group appointed by the NASA Administrator to carry out Project Mercury. He was involved in the initial planning of flight control activities for Project Mercury and has been directly responsible for conducting all of this Nation's manned space flight missions. He developed the basic concepts for the Mission Control Center here.

As Deputy Director, Kraft will assist Dr. Gilruth in planning and directing all phases of MSC operations. He will act for the Director on administrative and technical matters and will represent the center with NASA Headquarters and outside groups.

In other personnel actions today, Dr. Gilruth appointed Richard S. Johnston to the newly-established position of Manager, Experiments Program, Apollo Spacecraft Program. Johnston has been serving as Special Assistant to Dr. Gilruth. George W. S. Abbey, Technical Assistant to the Apollo Spacecraft Program Manager, has been detailed to the position of Assistant to the Director.

Of the Johnston position, Dr. Gilruth said, "As the Apollo Program progresses, increased emphasis and importance must be given to assuring that MSC meets national goals and objectives in the science area. It is imperative, therefore, that proper emphasis be given to assuring that experiment problems and needs are recognized and that science requirements are integrated into mission plans and spacecraft hardware."

Johnston will be responsible for management, development, and integration of all science, engineering, and medical experiments. His responsibility includes identifying crew, experiment and spacecraft integration problems and assuring appropriate actions.

Dr. Kraft was born in Phoebus, Virginia, February 28, 1924. He holds a Bachelor of Science Degree in Aeronautical Engineering from Virginia Polytechnic Institute, Blacksburg, Virginia, and honorary doctorate degrees from Indiana Institute of Technology and St. Louis University. He was awarded the NASA Distinguished Service Medal in January of 1969; was selected for the Arthur S. Flemming Award as one of the 10 outstanding young men in government in 1963 and was awarded the NASA Outstanding Leadership award by the President of the United States. He has received many other awards and citations.

Dr. Kraft is a Fellow of the American Institute of Aeronautics and Astronautics; a Fellow of the American Astronautical Society; and a member of the Pi Tau Sigma, National Honorary Mechanical and Aeronautical Engineering Society.

He is married to the former Elizabeth Anne Turnbull of Hampton, Virginia. They have two children, Gordon T., 17, and Kristi-Anne, 14. The Krafts reside in Friendswood, Texas.

Mr. Johnston was born in Keyser, West Virginia, October 1, 1926. He has a Bachelor of Science Degree in Chemistry from the University of Maryland. Johnston is married to the former Jean Armbruster of Washington, D.C. They have two children, Susan J, 16, and Richard A., 14, and live in Timber Cove.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

December 10, 1969

RELEASED BY NASA HEADQUARTERS

The National Aeronautics and Space Administration is proceeding with plans and preparations for the launch of Apollo 13 manned lunar landing mission on March 12, 1970, with the Fra Mauro area as the planned moon landing site.

The decision is based on a review of the photographs taken of the Fra Mauro area and successful demonstration of pinpoint landing techniques by the Apollo 12 mission.

NASA is continuing to assess the effects of lunar dust on visibility during the final portion of the landing phase as reported by the Apollo 12 crew.

Fra Mauro is a flat, vast highland area located at 17 degrees 36 minutes west longitude and 3 degrees 48 minutes south latitude, approximately 110 miles east of the Apollo 12 landing point in the Ocean of Storms.

The site of the Fra Mauro formation is an extensive geologic unit covering great portions of the lunar surface around Mare Ibrium. Expected result of a landing there is an understanding of the nature, composition, and origin of this wide-spread formation.

Apollo 13 is expected to be launched from Kennedy Space Center, Fla., no earlier than 3:28 p.m. EST March 12.

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Apollo 13 landing site
Add 1

Prime crew members are Spacecraft Commander James A. Lovell, Command Module Pilot Thomas K. Mattingly II, and Lunar Module Pilot Fred W. Haise, Jr. Haise is a civilian and Mattingly is a Navy Lieutenant Commander; neither has flown in space. Lovell, a Navy Captain, is a veteran of Gemini 7 and 12 and Apollo 8. Lovell has more time in space than any other astronaut.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

69-70 (80)

December 10, 1969

Houston, Texas --- A preliminary examination of the Apollo 12 Lunar Module television camera which stopped transmitting a usable picture from the lunar surface indicates there are no mechanical or electronic failures. The preliminary examination here indicates the top portion of the tube is burned.

The camera's TV tube will be sectioned in a vacuum atmosphere, then undergo extensive analysis at the Westinghouse tube plant at Elmira, New York. A report on the tube is expected in approximately 2 weeks.

As part of the preliminary examination, the automatic light control circuit was interrupted by cutting a wire. After the circuit was disabled, a picture was visible on the lower half of a monitor, indicating the lower part of the tube was functioning.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

MSC 69-81
December 23, 1969

HOUSTON, TEXAS--One hundred and forty-two U. S. and foreign scientists will present results of their detailed analysis of Apollo 11 moon samples at the Lunar Science Conference to be held in Houston, Texas January 5-8, 1970.

The scientists, representing industry, university and government laboratories throughout the world, have been examining for the past three months more than 1,300 separate moon samples returned in America's first lunar landing on July 20, 1969. The four day conference represents the largest gathering of lunar scientists at what is the most significant meeting in the 11 year history of the National Aeronautics and Space Administration.

Approximately 1,000 scientists, university, and government officials are scheduled to attend the Lunar Science Conference which will be held at the Albert Thomas Exhibit and Convention Center in downtown Houston. The list of invitees, in addition to the 142 lunar sample principal investigators and their co-workers, includes outstanding national and international scientists, the President's Science Advisory Committee, members of the National Aeronautics and Space Council, university representatives, members of lunar and planetary subcommittees, Lunar Science Institute officials, and Federal, state, and local officials.

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MSC 69-71
Add 1

The first day of the conference will be a general session covering selected scientific disciplines, followed on succeeding days by two parallel sessions organized by discipline. Invitees and principal investigators are expected to attend the general sessions and the parallel sessions are expected to draw 400 to 600 per meeting.

The parallel sessions will be divided into the following disciplines: Mineralogy, Analytical Chemistry, Physical Properties, Isotopes, Cosmic Ray and Solar Wind, and Organic Chemistry. The daily sessions are scheduled to begin at 9:00 a.m. and conclude by 5:30 p.m.

Samples from Tranquility Base collected by the Apollo 11 crew were distributed to 106 principal investigators in the United States and 36 in eight other countries. (Australia, Belgium, Canada, England, Finland, Germany, Japan, and Switzerland). Distribution of approximately 18 pounds of rocks, fines, and thin sections--about one third of the Apollo 11 lunar material--was made on September 12, 1969, following a 50-day preliminary examination at the Lunar Receiving Laboratory (LRL) at the NASA Manned Spacecraft Center, Houston.

The preliminary examiniations conducted at the LRL in Houston disclosed the Tranquility Base samples were of two basic rock types: (1) compacted lunar soil, and (2) igneous rocks. The preliminary examination revealed that rocks had been lying on the lunar surface for 10-150 million years and that the igneous rocks crystallized from 3-4 billion years ago.

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The principal investigators along with their co-investigators are scheduled to report on their 90-day study of almost every type of measurement that has been made on terrestrial igneous rocks or meteorites. The principal types of measurements made by the scientists are:

1. Mineralogy and petrology which includes the study of the mineral content of the rocks and compositions of these minerals. These studies will show how much water was present when the rocks crystallized or were formed on the lunar surface. The study will also show how surfaces were eroded by particles.

2. Measurements of physical properties of rocks and soil. These data will help in understanding optical observations of the moon from earth as well as future seismic experiments. Studies of microscopic fission tracts and cosmic ray induced tracks will help us understand the radiation history of the moon.

3. Studies of the chemical composition of the rocks and fines. These studies will determine the concentration of virtually every one of the 92 elements that occur on earth and in meteorites. Determinations of isotopic compositions of strontium lead, and the rare gas elements (Ne, Ar, Kr, and Xc) will determine the times of crystallization of the igneous rocks and the times that rocks have lain on the lunar surface. Studies of the rare gases in the soil will also furnish the first data on isotopic compositions of solar materials.

MSC 69-71
Add 3

Biologists and organic chemists will determine the structures and relative abundances of compounds of carbon indigenous in, and deposited on, the lunar surface; determine the origin of the indigenous carbon compounds; catalog microstructures in terms of organized elements and microfossils; and define the presence or absence of viable lunar organisms.

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NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

Houston 1, Texas

483-5111

December 31, 1969

RELEASED BY NASA HEADQUARTERS

Fred Hoyle, noted British astrophysicist, author, and educator, will be the principal speaker at the Apollo Lunar Science Conference dinner, January 6 at the Rice Hotel, Houston.

The dinner will be attended by participants in the Lunar Science Conference, January 5-8, 1970, where 142 U. S. and foreign scientists will present the results of their detailed analysis of Apollo 11 moon samples. The conference will be held at the Albert Thomas Exhibit and Convention Center in Houston.

The list of conference invitees includes outstanding national and international scientists, the President's Science Advisory Committee, members of the National Aeronautics and Space Council, university representatives, members of lunar and planetary subcommittee, Lunar Science Institute officials, and Federal, state, and local officials.

Hoyle, a leading propcnent of the theory of a steady-state universe (continuous creation of motion) received an MA in 1939 from Emmanuel College, Cambridge, England.

In 1939, Hoyle was elected a fellow of St. Johns College, Cambridge. He became Plumian Professor of Astronomy and Experimental Philosophy in 1958 and director of the Institute of Theoretical Astronomy in 1966. He joined the staff of the Mount Wilson and Palomar observatories, California, in 1956. He was elected to the Royal Society of London the following year.

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Add 1

Hoyle has written several science fiction novels, a radio play, and a number of books to explain science to the layman.

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